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THE
RUBBER AGE

VOL. XI SEPTEMBER 11, 1922 No. 11

Scientific Management for Rubber Manufacturers

Planning and Dispatching

This Fifth Article of the Series, Which Began in the June 10th Issue, Will Be Recognized as One of Especial Value to Executives

By Alfred Baruch

Consulting Industrial Engineer, New York

HIGH LIGHTS OF THIS ARTICLE

Planning is a service, and the planning department is the general staff of the rubber factory.

Dispatching is a part of direct production.

The superintendent must have complete command of all the factors of production.

Planning production covers: Analysis of production needs; time and motion studies; machine efficiency records; laying out new equipment and rearranging old; betterment plans; cost-keeping; production and cost reports; purchase requisitions; production orders.

The dispatching department carries out the schedu'e of the planning department as best it can. It collects labor and material reports and makes up production and cost reports.

An actual illustration of dispatchers' activities in the rolling tube department is given in detail.

IT will be remembered that in the article on "Organizat'on," the planning department was put in the service group whi'e the dispatching department was put in the production gr up. This may seem strange to some when they come to understanding that the chief function of the dispatching department is to carry out the orders of the planning department. But it is to be hoped that this question will be perfectly clear before the end of the chapter. A consideration of the work of the planning department will throw light on the matter.

F. W. Taylor was the greatest exponent of functional organization. Therefore he included among the duties of the planning department functions which it cannot possibly perform under the true line and staff organization. According to Mr. Taylor, these are as follows:

A. The complete analysis of all orders for machine or work taken by the company.

B. Time study for all work done by hand throughout the works, including that done in setting the work in the machines, and all bench and vise work, transportation, etc.

C. Time study for all operations done by the various machines.

D. The balance of all materials, raw, stores and finished, and the balance of all material ahead of each class of machines and workmen.

E. The analysis of all inquiries for new work received in the sales department and promises for time of delivery.

F. The cost of all items manufactured with complete expense analysis and complete monthly comparative cost and expense exhibits.

G. The pay department.

H. The symbol system for the identification of parts and charges.

I. Information Bureau.

J. Standards.

K. Maintenance of system and plant, and use of the tickler.

L. Messenger system and post office delivery.

M. Employment bureau.

N. The shop disciplinarian.

O. A mutual accident insurance association.

P. Rush order department.

Q. Improvement of system or plant.

It is obvious that the above was written before the days of compu'sory insurance. Furthermore it was designed especially for the metal working shop. But the main principles are still applicable with certain basic modifications to the rubber shop.

Rubber working is still at an early stage in its development and for that reason it is necessary to intrust a good deal of the specification work to the discretion of the factory superintendent. But that does not mean that he must be loaded down like a pack-horse so that he has more than he can do and therefore does very little. If a man has too many details to attend to, he cannot possibly take care of all of them. It is natural for him to neglect some of them—the ones that are least likely to bring direct censure on his head. He must keep production going. If he does not do that the sales department will complain and he will get into trouble with the boss. But if he lets the work run into a lot of overtime, if care'ess inspection lets a lot of defective work slip by so that the tires have to be sold as seconds, if the power bills run high—all this can be exp'ained away in a pinch. But the fact that he failed to deliver tires when the tires were due, that can never be explained away.

Thus we rob Peter to pay Paul. It is false economy to burden the superintendent with any detail unless the shop is actually so small that all the details can easily be carried in

his head. I doubt if any rubber shop can be operated on this basis. The nature of rubber work is such that even a very small shop requires a comparatively large investment and the services of a lot of men. In that case, the superintendent must be free at all times to supervise the work and to direct the activities of all the men under him. He cannot do this if he has to spend his time running down little details that a much cheaper man could tend to or that need never occur under scientific management.

However, we made the statement above that it is highly desirable to entrust the superintendent with as much authority as possible since in rubber shops so many questions will come up that require prompt disposition. This can be done only by putting under his control an organization that can do for him all the work that he cannot do for himself. It is for this reason that the dispatching department is put under the production division while the planning department is put under the service division. The superintendent must have complete command of all the factors of production and dispatching is certainly one of them in the modern scheme of manufacturing.

Planning, then, is a service, while dispatching is a part of direct production. With this in mind we will examine the functions of each of these activities. Planning will be considered first.

Functions of the Planning Department

The planning department is the general staff of the factory. It plans every phase of the work from beginning to end and is responsible for co-ordinating the activities of all departments. A statement of its functions may be made as follows:

1. Analyze production requirements.
2. Make time and motion studies.
3. Develop machine efficiency records.
4. Lay out new machinery and re-arrange the old whenever necessary.
5. Develop all necessary betterment plans.
6. Determine the cost of the product.
7. Prepare all production and cost reports.
8. Issue all purchase requisitions and fix minimum and maximum limits.
9. Issue production orders.

It is very seldom that one finds all of the above duties given over the the planning department. In most cases, foremen are reluctant to yield any of their functions for fear of losing their authority. But on examination it will be found that none of these duties have anything to do with the foreman's authority but rather with the work that he has to do personally and which interferes with actual supervision. Finally, the planning department relieves the foreman of work that can best be done by specialists and permits him to devote all of his time to production. These various functions will be considered in turn.

Analysis of Production Requirements

It is in the small rubber shop that planning is of the greatest importance. In the large shop, there are so many machines that it is possible to specialize them so that each one works on one class of work only. It is comparatively easy to plan the work for each machine so that requirements are met. But where two or three calenders have to do the work for the entire shop and in order to get out the required production, one has to run tire stock, tube stock, and friction all on one calender, the planning has to be carefully done if trouble and endless delays are to be avoided.

Therefore, it is necessary to analyze the orders from the sales' department so as to arrive at a schedule of production that will get the orders out on time and still get the maximum use possible out of the machines. The best way is to make out a graphic chart of the machine capacities and then to fill in for each machine all the work that can be done on it without changing the set-up. This chart is laid on cross-section paper and each section is designated to represent one unit of time. The graphic lines are straight and each one covers as many spaces as there are hours of work ahead of the machine or group of machines it represents. By making this chart out backwards and starting with the time when this particular order must be filled, it becomes an easy matter to determine just when the compounding must begin in order to get the tires or tubes or whatever they may be, out on time. Of course, in making this analysis of the time required for production, allowance must be made for unforseen delays that might occur and for the time it takes for material to travel from one department to another.

Another very important point that must be borne in mind in scheduling production requirements is the fact that some departments require more time to go through a given volume of work than others. If rubber manufacturing were a continuous process and nothing more this would simply be a question of balancing the equipment. But since it really is a combination of the continuous process and the intermittent process, it is necessary to time the work so that one department does not run while the department behind is still turning out the order.

To illustrate this point let us assume that there are three mills given over to lampblack compounds and that their combined output is about 2500 pounds per hour. All of this rubber must be calendered on one machine whose consumption is about 4,000 pounds per hour. Now if the batched rubber is fed to the calender as rapidly as it comes off the mills, the calender will have to stand idle about ⅜ of the time. In order to avoid this situation it is necessary to schedule the work so that the milling will be half through before the calender begins its work.

Where jobbing work is done in the rubber factory, the planning department will have the additional task of routing the order through the shop so as to get the work done in the most economical way possible. This will be necessary whenever there is any choice as to what method to pursue in manufacturing any rubber product. In any event, the planning department will have to issue move cards or route tickets for the transfer of material in process from one department to another.

An actual example of the functioning of the planning department in making up the schedule may be found in the following excerpt from one of the writer's reports after an installation:

"The daily calender schedule is made up of orders that come to the Schedule Office every morning before 9:00 o'clock from all departments using calendered material. The order is written on a form that shows the department ordering, the kind, and quantity of stock wanted. Upon the receipt of these orders, the schedule clerk must consult batched stock, fabric, and liner records to see that he has enough material on hand. He must not schedule a job for the next run unless he has enough material for it or unless he has definite assurance that the material will be on hand."

In the case of the factory referred to above, the organization was so large that branches of the planning department had to be established for the individual departments. But in most cases, a centralized planning department is preferable. We find among the other duties of the planning department those of determining the sequence of jobs on a machine and of deciding disputes as to changes in schedules between departments.

In order to be able to make up the production schedules, the planning department must have certain basic information at its command. Obtaining this information is a part of the functions of the planning department and the next few paragraphs will be devoted to this activity.

Make Time and Motion Studies

The whole secret of proper scheduling and routing of production lies in knowing the length of time that it takes to perform each operation. Closely connected with this knowledge is the work of reducing the required time to the lowest possible limit consistent with safety from the point of view of the men, the product, and the equipment. The first is obtained through time studies; the second through motion studies.

Time studies may be made in two ways: (1) through labor reports; (2) through stop watch observations. Labor reports that become the basis of time studies must be made in great detail. All operations must be listed in sequence and the

workman, the gang boss, or whoever else makes out the report must be very careful that the time reported is as nearly correct as possible. This time is then averaged and production standards are based on these average records. However, these records at best can be used only for major operations in the process since it is obviously impossible for the workman or the timekeeper to time the separate motions that make up an operation.

These reports can be used only for estimating the time allowance for each department in making up the schedules. For example, it can be determined that a calender can normally turn out five rolls per hour, or that a carcass builder can make five tires per day. But it is impossible to determine from the reports whether all of the men are making unnecessary motions or doing work that can better be done by a lower-priced man. This can be found out only through stopwatch observations.

Stopwatch observations require a complete analysis of the motions involved. This automatically brings to the attention of the observer the unnecessary steps that are taken by the worker. Then, a close analysis of the time-study sheet will reveal still other savings in time that can be made. No worker relishes doing a lot of work for nothing especially when he is on piece work. If he is approached in such a way as to enable him to understand that the time studies are not designed to make him work at breakneck speed all day in order to earn his wages, he will be of great assistance in making intelligent studies.

These have the effect of levelling men more or less and increasing the general average of production. The difference between one man's performance and another's is due to the fact that one man has found out one or more short cuts and can therefore save time. In this way the mere act of listing the operations often has the effect of pointing out savings that can be made. Careful analysis of the operations themselves and of the differences between one man's methods and another's will reveal still other unnecessary motions.

Time and motion studies lead to the standardization of methods referred to in the last chapter. Once established, they offer the planning department a basis for comparison of daily output on the part of each man that gives the management tight control over the effort of workmen. In addition the establishment of definite routine reduces the chances for mistakes and increases the quality of the product.

Machine Efficiency Records

The rubber factory uses so much big machinery that the entire production scheme is naturally built around the machine. Therefore, it is necessary to develop standards of performance for the machines as well as for the men and this task, too, falls to the planning department.

The standards for machines must be based on performance rather than on capacity. For example, a bias-cutting machine may be able to cut three rolls of ply friction per hour if it works constantly. But in actual practice it will probably succeed in cutting only two and one-half rolls per hour. This latter figure naturally becomes the measure of the machine's efficiency. These records may be based on the daily production reports that are obtained for the material inventories, or they may be derived from the labor records, and in some cases they may even come from automatic counting devices that can be attached to the machines.

In any case the planning department must compile systematic records from which standards may be derived that become an index to the working condition of the machines. A machine may fail to come up to standard in performance for several reasons and in compiling these records it is necessary to tabulate the reasons. They are listed below:

1. No orders.
2. No material.
3. Machine breakdown.
4. No workmen.
5. Miscellaneous.

These records are invaluable in pointing out the cause of inefficiency in a factory. It is easy enough to remedy an occasional disturbance in the productive system. But when there are departures from the normal or standard constantly, and the same reason appears in the reports as an explanation for the failures, it is an indication that the cause of the difficulty is a serious one and should get managerial attention. For example, a calender might break down once due to some unforseen cause. But if the same calender is constantly breaking down that means that the anticipatory inspections were not thorough enough to correct some fundamental weakness that exists. The maintenance department corrects these troubles as they come up but it is the planning department that calls attention to the serious difficulties and takes the necessary steps to correct them.

Layout

It is the function of the planning department to determine the exact arrangement of the equipment. This should be done very carefully when the plant is built or moved into a building. As was pointed out in the second chapter, this work of layout has to take into account first of all the sequence of operations. Then it must consider the accessibility of storerooms, elevators, etc. It must also allow plenty of space around the machines so that they may be supplied with material without congestion.

Not only must the planning departmen layout the machinery at the very beginning but it must also make experiments constantly so as to see what improvements may be made in the existing arrangement. Nothing is fixed beyond change in a factory and the work of the planning department least of all. In one rubber factory merely re-arranging the roll-up tables in the tube room increased production nearly fifty per cent.

Develop Betterment Plans

The planning department must also suggest all other improvements that can be made, especially with reference to welfare work and industrial relations. This last is one of its most important functions. There is nothing so serious in the whole scheme of mass production as the loss of personal contact between the management and the men. This is inevitable in the process of specialization that is so essential to standardized production on a large scale. The functions of mind and hand become more and more separated. The farther the manager drifts from his men, the harder it becomes to keep in touch with their personal needs and with the effects of the work on them as individuals.

Questions of bonuses and other forms of extra compensation for good work must be taken up in their turn and settled by the planning department. Setting piece rates comes under this category and there is no point in the whole production scheme that affords more opportunity for injustice. Failure to make the proper time studies may produce a rate that is too high or too low and thus work a hardship on the owners or on the men. The men may be compelled to strain themselves to earn a normal wage, if the rate is wrong; and the owners may not only be compelled to pay a higher rate than their competitors but they may be deprived of production that is rightfully theirs if the rate is too low. Constant juggling of rates causes discontent among the men and leads to soldiering because of their fear that the rates will be cut.

Determine the Cost of the Product

Cost keeping is closely related to production. The cost of the product is the final test of production efficiency. Finding the cost requires an intimate knowledge of the process involved since it is necessary to know just how to distribute the cost so as to insure justice to all classes of work. For this reason the task of finding the cost must be in the hands of the planning department since it is in the best position to obtain the desired information in the most economical way.

It is customary to give the accounting department this work. But the accounting department cannot possibly do it unless it duplicates the work of the planning department in collecting records. Besides the men in the accounting department are usually not prepared to do this and as a result they flounder around in a sea of records and reports that mean little and bring discredit upon the whole work of scientific management.

The reason that the accounting department cannot do the cost work is that it is interested in records of what happened in the past while the planning department is of necessity concerned with the present. Accounting determines the profit

or loss on the business as a whole. It furnishes the balance sheet which indicates the extent of the assets and the liabilities. All accounting is the same. The general accounts show the totals of all labor and all material purchased and all sales with regard to the details that brought this condition about. They indicate whether or not the business is making money but are unable to show where the trouble lies in case the business is doing poorly. They indicate whether the total prices asked are enough to cover the cost of production, but they do not show the cost or the profit of each particular line manufactured. They do not show where the money is going. They do not show how much to charge for any line to make it pay for itself.

It is clear, then, that the main distinction between cost keeping and accounting is this: accounting reflects the condition of the business as a whole; cost keeping shows the details of production. Cost keeping makes comparisons between past and present performance. It sets definite limits on overhead expense and warns the manager when the danger line is being approached. It indicates the business policy necessary. When retrenchment is necessary it shows just how and where to cut.

Cost keeping is a shop function. It shapes itself after the particular business it is in. It can best be done by the planning department because the latter collects records of production anyway and can determine the cost from these records without duplication of effort. They can be designed so as to require very little clerical effort.

In the rubber field, costs are largely estimated at the present time. This is due to improper planning because the production records can be so arranged that they will furnish actual costs. The purpose of this would be largely to point the way to the elimination of waste. Except for the preparation departments, it is easy to obtain rubber cost with very little difficulty. But this cost will not indicate the waste that exists and it is therefore necessary to base the cost of producing rubber articles on the cost of running each machine per hour. This is the only way in which each class of product can be charged with its true cost.

Prepare Production and Cost Reports

One of the most important purposes that the planning department serves is that of intelligence or information bureau for the management. The larger the organization becomes, the more difficult it is for the management to keep in touch with the details of production. They cannot retain the true perspective unless the actual condition of the business is presented to them in such form that they are able to grasp the important facts very quickly.

This is done in various ways by the planning department. Fluctuations in production and in revenue can best be represented by graphic lines. It will be found generally that for managerial purposes, graphic lines are much more easily grasped than long columns of figures. However, cost reports should be in actual figures and the columns comparing the current with the predetermined costs should be placed side by side so that comparisons may be made easily.

The reports should be so arranged that the salient facts are immediately apparent. If the factory manager wishes to go into greater detail than is presented on the first page, he can turn back to the succeeding pages.

Control the Supply of Material

The material supply is more conducive to waste than any other element in production. The management of any factory would no doubt take drastic action if they should happen to discover a slight discrepancy in the general accounts. But they are very careless in the accounting for thousands, and in some rubber factories, for millions of dollars' worth of material.

Carelessness of this sort comes from early habit. When the factory is very small almost all of the material on hand can be accounted for by taking a rapid look around the bins. If anyone needs anything he tells the boss what he wants and the latter gets it, provided he thinks the purchase necessary. No one would dream of trying to slip anything over on the boss. But when the plant gets bigger and the boss is supplanted by a purchasing agent, the old check on expenditures is eased. If an employee thinks that he needs something or another to make the work go more smoothly, he writes out a requisition or makes known his wants to the purchasing agent by word of mouth. The latter is seldom in a position to pass on the need of the article and rather than interfere with production, he will make the required purchase. This does not mean in any sense that the employee is dishonest. But it is very easy to become indulgent when all that is necessary to obtain one's wish is to write out a requisition.

The best way to avoid this difficulty is to have all requisitions clear through the planning department. This department is in the best position to pass on merits of each requisition and besides will be greatly aided in its work of getting maximum production on the smallest possible investment if they can control the purchasing of material. In the past few years rubber men have learnt the danger that accompanies operating on a large volume of stock in proportion to the output. Rubber production can easily be put on a thirty-day basis if the right sort of planning is resorted to.

In a well organized factory, the planning department passes on all purchase requisitions. It follows naturally that the planning department must also set the maximum and minimum limits for all stores of materials and supplies. These limits determine when it is time to re-order and definitely mark the largest quantity the storekeeper may have on hand at any time. In this way it is possible for the planning department to control the material supply and incidently the investment in material.

Issue Production Orders

Having accumulated all of the above information, the planning department is now in position to issue production orders. The production order is based on a knowledge of what is required, what material is on hand, what labor can do, what the machines can do, and which of them are available.

The production order may go into great detail as what is required as in the case of jobbing work, or it may simply state the kind, quantity, and sizes needed as in case of stock production, relying on the accompanying sheets to supply the foreman with the required information. Of course, in most rubber work, the production of the same article, such as a tire of a certain kind and size, is repeated many times and it becomes easy for the foreman to memorize the specifications.

The planning department issues the production orders to the dispatchers and there its authority ends. Its function is that of supplying the production department with all the information, instruction, and supplies that it needs. The work of actually getting out the production is left to the production superintendent and his assistants.

Dispatching

The work of the dispatching department is to follow the orders of the planning department. The planning department lays out the schedule and the dispatchers carry it out as well as circumstances permit. To return to our previous analogy, the production dispatchers are like the train dispatchers—they receive the schedules and try to meet them but if they cannot, they meet them as well as they can. The production dispatchers must notify the planning department whenever they are held up because of lack of material or of orders, the maintenance department when there is a machine breakdown, and the employment department when the foreman is short of help. They also collect all labor and material reports and make up the production and cost reports for the planning department.

An actual illustration of dispatchers' activities may be found in the following report of installation in a rubber factory:

Rolling Tubes

"The order for the tubes to be rolled each day shall be given to the heat dispatcher by the tube schedule clerk. The heat dispatcher shall assign the number of tables required on each size to meet the schedule and then issue the job cards to correspond with the assignment. He shall enter the assignment on the serial check sheet which shows the serial number of the heat to be rolled, together with the date, kind,

(Continued on page 394)

New Rubber Research Laboratories at Croydon, England

THE new rubber research laboratories of the British Rubber and Tire Manufacturers' Research Association, consisting of a group of three modern brick buildings at 105-107 Lansdowne road, Croydon, a suburb of London, were opened with appropriate ceremonies on July 26 by Lord Colwyn in the presence of many persons prominent in the industry on the other side of the Atlantic. Dr. B. D. Porritt, one of the foremost British chemists, is director of the laboratories which up to this time have been located in the chemistry department of University College, London, W.C. Both Lord Colwyn and Alexander Johnston, chairman of the board of managers of the institution, remarked in their addresses that the opening of these research laboratories was an epoch-making event in the history of the British rubber industry. Mr. Johnston pointed out that in providing a central co-operative institution for investigation and solution of all rubber problems, Great Britain was in advance of such highly-developed industrial countries as the United States, France, Germany and other European nations except Holland.

This leads to the suggestion that a group of rubber research laboratories should be established in this country, probably at Akron, Ohio, the center of the industry, along the lines of the splendidly equipped buildings just opened at Croydon. To those representatives of the crude rubber, fabric and chemical departments of American rubber manufacturers who may visit London a warm welcome is assured by Dr. Porritt and his associates, and ample opportunity will be afforded to inspect the equipment and operation of the laboratories.

NEW RESEARCH LABORATORIES OF THE BRITISH RUBBER AND TIRE MANUFACTURERS' RESEARCH ASSOCIATION

The British Rubber and Tire Manufacturers' Research Association, which was founded toward the end of 1919, has a membership of fifteen manufacturers who contribute various amounts for the support of the institution, the subscription being based upon the capital employed by each factory, the maximum contribution being £1000 and the minimum £50 annually. The policy and the administration of the laboratories are controlled by the members of the association through the board of management. The British government grants £5000 annually toward the maintenance of the institution provided the rubber industry contributes an equal amount. More than twenty other British industries are likewise being encouraged by the government to establish similar research institutions which will prove their worth to the country in times of peace no less than in wartime.

The buildings consist of two houses of the early Victorian type with semi-basements, between and connecting which a large hall to accommodate the heavy machinery has been built. The floor of this hall is on the same level as the floors of the semi-basement, and the ground in front has been sloped off at an easy angle to admit the daylight. This lower floor accommodates the drug room, workshop, mill room, mechanical testing laboratories, and caretakers' rooms. On the next, the main entrance floor, there are in the left wing the administrative offices, consisting of director's private office, board room, and general office. The right wing on the same level contains the library and other rooms. The floor above this is entirely devoted to working rooms in both wings, there being connections across the flat roof of the mill room or machinery hall. In the attic there are store rooms, water storage and softening tank, and caretakers' sleeping quarters. The site has a frontage of 120 feet and a depth of 206 feet, providing ample space for future extension at the rear. All piping work has been carried out externally on the walls wherever possible, and independent circuits with shut-off cock have been provided for each room. The electric supply taken from a 2000 volt power main is converted by a 25 kilowatt transformer to 200 volts to provide for the lighting and power supply of the building, while a D.C. supply for laboratory purposes has been secured by installing a 20 kilowatt motor generator set.

The association membership is as follows: Avon India Rubber Co., Ltd.; W. and A. Bates, Ltd.; Dunlop Rubber Co., Ltd.; Harboro' Rubber Co.; Henley's Tyre and Rubber Co., Ltd.; India Rubber, Gutta Percha, and Telegraph Works Co., Ltd.; Chas. Macintosh and Co., Ltd.; J. Mandleberg and Co., Ltd.; North British Rubber Co., Ltd.; Redfern's Rubber Works, Ltd.; St. Helen's Cable and Rubber Co., Ltd.; George Spencer, Moulton and Co., Ltd.; Werneth Rubber Works, Ltd.; Wood-Milne, Ltd.

Pirelli Celebrates Fiftieth Anniversary

THE famous house of Pirelli & Co., oldest and largest rubber manufacturers in Italy, has just celebrated the fiftieth anniversary of its founding and the event was made the occasion of a great *festa* by employers and employees wherever the firm is represented in that country.

It was in 1872 that young Pirelli, now a senator and a man upon whom many honors have been showered, quite by accident glimpsed the opportunities for rubber manufacture on his native soil. He was an engineer and in one of the Italian ports he required some rubber hose for a special purpose. His difficulty in finding this hose gave him the idea that other engineers and users were in the market for rubber goods of various kinds, and he decided to manufacture them. In Switzerland and France he obtained the necessary technical training, and with a capital of about $50,000 he embarked upon his great adventure.

The success of the business is shown in the growth of the office staff from five to 1,056 and of the factory employees from thirty-eight to 7,560. Headquarters of the firm are at Milan. The present capital is $30,000,000, and the house of Pirelli is one of the greatest in Europe. To commemorate the event a permanent historical museum of the rubber industry has been opened at Milan.

Senator Pirelli, who fought with Garibaldi in the early days of the struggle for Italian unity and who has been an important factor in the upbuilding of the Italy of today, still exercises supervision over the great rubber factories that bear his name and that supply the Mediterranean countries with most of their rubber goods. His sons Alberto, Piero and Giorgio are associated in the business with him, and will keep the control in the family when their father has passed to his reward.

In French Patent No. 528,182, there is described a process of regenerating rubber, which does not employ either acid, alkali or solvent. The rubber is simply ground up finely and then put through the kneading machine.

Rubber Chemists Meet in Pittsburg

AS we go to press the Rubber Section of the American Chemical Society starts its sessions at the 64th meeting of the society held at the Carnegie Institute of Technology, Pittsburg, Pa. Headquarters of the members are at the William Penn Hotel.

The Rubber Division program will consist of committee reports, reading of papers and election of officers.

The complete program of the division is as follows:

WEDNESDAY AND THURSDAY
Sept. 6 and 7
Room 104 (Industrial Building)

Committee Reports:

Executive.—C. W. Bedford, Chairman.
Accelerator.—J. B. Tuttle, Chairman.
Physical Testing.—C. O. North, Chairman.
Discussion of "Methods of Research Testing" by committee.
Analytical Standardization.—S. Collier, Chairman.

Papers to be Read:

O. de Vries. American Conclusions Regarding Crude Rubber. (By title.)
John B. Tuttle. Chemical Reactions of Sulphur Terpenes with Rubber. I.
H. A. Winkelmann and Harold Gray. Studies in Vulcanization. Mechanism of the Acceleration of Vulcanization of Zinc Ethyl Xanthogenate.
D. F. Cranor. Effect of Certain Tread Pigments on Temperature Developed in Pneumatic Tires.
Winfield Scott. Disubstituted Guanidines.
W. W. Vogt. Studies in Hysteresis of Rubber Compounds.
Ira Williams and D. J. Beaver. Thermal Changes during Vulcanization.
Frank G. Breyer. Zinc Oxide in a New Physical Condition.—Its Effect upon Rubber Compounds.
C. W. Bedford and Harold Gray. Reactions of Accelerators during Vulcanization. V. Dithiocarbamates and Thiuram Disulphides.
Erle C. Zimmerman. A Method for the Measurement of Resistance to Tear in Vulcanized Rubber.
Harlan A. Depew. Results of Variation in Sulphur and Hexamethylenetetramine Content on Some of the Properties of Compounded Rubber.
Harlan A. Depew. An Abrasion Testing Machine for Rubber Samples.
W. E. Glancy. The Influence of Certain Compounding Ingredients in Hard Rubber.
W. R. Hickler and W. E. Glency. A Convenient Nomograph for Rubber Chemists.
P. M. Aultman and C. O. North. Rubber Softeners.
Ellwood B. Spear and J. F. Purdy. The Measurement of Temperature in Rubber Articles by Means of Thermocouples.
Ellwood B. Spear and H. A. Endres. The Limitations of the Obscuring Power Test for Compounding Materials.
Herbert A. Endres. The Crystallization of Sulphur in Rubber and the Phenomenon of Blooming. (Lantern.)
A. F. Hardman. The Microscopic Examination of Rubber Containing Antimony Pigments. (Lantern.)
H. W. Greider. The Resilient Energy and Abrasion Resistance of Vulcanized Rubber. (Lantern.)
W. B. Wiegand and H. A. Braendle. Persistence of Calender Grain after Vulcanization. (Lantern.)
L. B. Sebrell and C. E. Boord. A Study of the Relation of the Structure of Metacaptobenzothiazole and Its Derivatives to Their Value as Accelerators of Vulcanization. (Lantern.)

Election of Officers:

Astracts of a number of the above articles are given on this page. C. W. Bedford is Chairman and Arnold H. Smith is Secretary of the Rubber Division.

ABSTRACTS OF ARTICLES TO BE READ AT MEETING OF RUBBER DIVISION OF AMERICAN CHEMICAL SOCIETY

An Abrasion Machine by which Compartive Wear Tests Can be Made on Laboratory Test Pieces or on Sections Cut from Tire Treads

By H. A. Depew

A simple abrasion machine is described, on which laboratory test pieces or sections cut from tire treads can be tested for comparative resistance to the abrading or rasping influences of surfaces of known composition.

The test pieces fastened at one end, only, are held against a common, uniformly moving, abrading surface with a definite uniform pressure.

The effect of pressure upon the test piece and the effects of speed, and composition of the abrading surface are discussed.

A comparison of this method of testing with the loose abrasive method is given. Comparisons by service tests (tires and heels) are also made.

The Results of Variation in the Sulphur and Hexamethylenetetramine Content on Some of the Properties of Compounded Rubber

By H. A. Depew

A non-blooming compound must not contain more than 1 per cent of free sulphur calculated on the rubber.

Using hexa methylenetetramine as an accelerator, the tensile strength, elongation, and maximal area under the stress-strain curve increase with a decrease in the amount of sulphur used, and to lesser extent are increased by using a large amount of accelerator.

The shape of the stress-strain curve is not affected by the sulphur and accelerator content.

The vulcanization coefficient at the optimum cure depends on the sulphur content.

Rubber Softeners

By P. M. Aultman and C. O. North

The action of rubber softeners on rubber itself has received very scant attention from rubber chemists. The writers in an effort to find out this action, heated vulcanized rubber in each of a large number of softeners until total disintegration ensued. The comparative rate of disintegration was also observed by means of a test in which the swelling of the rubber in the softeners was measured. This method was checked roughly. Sulphur, accelerators, and both together, were added successively to the softeners to find out their effect on the action, with the ersults that in each case there was an increase in the rate of solvation. The state of cure was also found to have an effect on the results, as the rate of solvation was found to be inversely proportional to the cure. Mixtures of softeners were found to have, in many cases, the average properties of their components. From these and compounding results, the writers are of the opinion that a definite relation can be worked out between solvating action and the effects of softeners on the stress-strain curve.

A Study of the Relation of the Structure of Mercaptobenzothiazole and its Derivatives to their Value as Accelerators of Vulcanization

By L. B. Sebrell and C. E. Brood

The preparation of mercaptobenzothiazole derivatives by the methods reported in a previous paper has been extended to include several new mercaptothiazoles not previously described. Other compounds having a similar structure have been prepared and their curing power compared with that of mercaptobenzothiazole. In this way the particular grouping responsible for the activity of mercaptobenzothiazole as an accelerator has been identified. The effect of substituents in the benzene nucleus of mercaptobenzothiazole upon its activity as an accelerator has also been studied.

Disubstituted Guanidines

By Winfield Scott

The article consists of notes on the chemistry of Diphenylguanidine and some compounding data on various Disubstitued Guanidines.

Effect of Certain Tread Pigments on Temperature Developed in Pneumatic Tires

By D. F. Craver

The paper is a short description of tread compounds used, stress-strain curves of same, theoretical conductivity as calculated by Williams formula, and the actual heating up of tire built with such treads when run on the road, temperatures being taken by means of thermo couple inserted by the awl which was devised by the Research Department of the New Jersey Zinc Company.

Thermal Changes During Vulcanization

By Ira Williams and D. J. Beaver

Research Laboratories, Firestone Tire & Rubber Company, Akron, Ohio

..The measurement of the temperature developed in the center of a cylinder of rubber sulphur mixture which is immersed in a constant temperature bath shows that heat is liberated during the first stages of the reaction. An absorbtion of heat is indicated during the later stages. The extent of these thermal changes has been estimated when stocks of different sulphur and accelerator content were cured at different temperatures. The relationship between the temperature developed and the percent combined sulphur is given.

The Influence of Certain Compounding Ingredients in Hard Rubber

By W. E. Glancy

Several articles have been published showing the action of compounding ingredients in soft rubber goods. Very little has been published thus far with regard to the principles of hard rubber compounding. Graphs are shown which indicate the mass action effect of sulphur, the curing properties of lime and magnesia, and the loading qualities of M.R., tire reclaim, and resin in hard rubber mixtures.

A Covenient Nomograph for Rubber Chemists

By W. R. Hickler and W. E. Glancy

Rubber chemists have frequently use for tables which will be available for converting the cure of a rubber stock from a known temeprature and time to a different temperature with coresponding time. A formula has been worked out from experimental values and a nomograph constructed whereby it is possible to quickly find the desired cure.

Reactions of Accelerators During Vulcanization. V. Dithicarbamates and Thiuram Disulphides

By C. W. Bedford and Harold Gray, Akron, Ohio

The metallic dithiocarbamates are true accelerators of vulcanization. Metallic oxides are necessary to prevent the decomposition of the metallic salts of hydrogen sulphide or to reform them after decomposition. Hydrogen sulphide changes thiuram disulphide to dithiocarbamates and decomposes the metallic salts. Ammonia increases the curing power of both thiurams and zinc dithiocarbamates. These views are supported by chemical data obtained in the laboratory in the absence of rubber.

The Resilient Energy and Abrasion Resistane of Vulcanized Rubber

By H. W. Greider, Mellon Institute

A study has been made of the effects of several common compounding pigments upon the abrasion resistance of vulcanized rubber. It was found that gas black gives the greatest resistance to abrasion, followed by light magnesium carbonate, china clay, zinc oxide, colloidal barium sulphate and lithopone, in the order named. There is found to be a relationship, but not a direct proportionality, between tensile strength and abrasion resistance, for rubber compounded with reinforcing pigments. Resilient energy gives an approximate index of abrasion resistance with gas black, magnesium carbonate, china clay and zinc oxide, but it is not a measure of abrasion resistance with colloidal barium sulphate or lithopone. The data appear to show that hardness (or rigidity) is also a factor in resistance to abrasive wear. The product of resilient energy and hardness is suggested as an index of toughness.

Some principles are suggested which may be of value in compounding rubber to obtain high resistance to abrasion, including the use of high grade accelerated mixings and combinations of reinforcing pigments in such proportions by volume as to give proper rigidity combined with high resilient energy. Combinations of gas black and magnesium carbonate in suitable proportions are found to give high resistance to abrasion, high resilient energy and considerable hardness and rigidity.

The Microscopic Examination of Rubber Compounds Containing Antimony Pigments

By A. F. Hardman

To secure a section of a rubber compound sufficiently thin for microscopic examination, some method of hardening must be employed previous to sectioning. Sulphur monochloride has been successfully used for this purpose, but the reagent attacks and destroys the identity of the sulphides of Antimony. A bath of molten suphur may be used to produce the required rigidity wtihout materially altering the appearance the Antimony pigments. Photomicrographs illustrating the new method are shown.

The Limitations of the Obscuring Power Tests for Compounding Materials

By Ellwood B. Spear and H. A. Endres, Akron, Ohio

Experimental evidence is preesnted in this article that the Obscuring Power Test for compounding materials is unreliable and often misleading in the region where the diameter of the particles is in the neighborhood of ¼ the wave length of light, viz., 0.1 mu.

The Measurement of Temperature in Rubber Articles by Means of Thermocouples

By Ellwood B. Spear and J. F. Purdy, Akron, Ohio

Measurements of the temperature in rubber articles by thermocouples are all too low where the depth of insertion is not great, 1/3 inches, and where there is at the same time a temperature differential along the buried portion of the thermocouple wires.

The correction to be applied depends upon the depth of insertion, the size of the wires constituting the thermocouple, and the temperature differential.

A new method is given for measuring the temperature in pneumatic and solid tires.

Correction curves are given for use here ordinary thermocouples have been employed.

Studies in Vulcanization: Mechanism of the Acceleration of Vulcanization of Zinc Ethyl Xanthogenate

By H. A. Winkelmann and Harold Gray

The gaseous, liquid and solid decomposition products of zinc ethyl xanthogenate are shown to have no accelerating value. The activity of zinc ethyl xanthogenate as an accelerator is due to the unchanged molecule.

The Crystallization of Sulphur in Rubber and the Phenomenon of "Blooming"

By Herbert A. Endres

A solution of sulphur in rubber exhibits the same phenomena of diffusion, crystallization and super-saturation as are shown by solutions of sulphur in other solvents.

When rubber saturated with sulphur at calendering or vulcanizing temperatures is cooled, the solubility is exceeded and the excess sulphur separates as super-cooled globules, dendrites, or stable rhombic crystals, depending upon the rate of cooling.

Sulphur bloom is always composed of rhombic sulphur; the stable form at room temperature. It may be caused by crystallization at the surface of the rubber, either directly from solution or by transformation from super-cooled globules or dendrites.

A Method for the Measurement of Resistance to Tear in Vulcanized Rubber

By Erle C. Zimmerman

A method is presented for measuring the resistance to tear of vulcanized rubber in terms of work. In this test a sheet of rubber 0.1″ thick is supported between hooks on the ordinary tensile testing machine, and an autographic chart is taken as the rubber is torn. Resistance to tear is expressed as inch-pounds per square inch of rubber torn, in the formula,

$$W = \frac{Fe}{\frac{KA - 2}{Lt}}$$

in which "K" is a constant, "A" is the work area on chart, "L" is the distance torn, "t" is the thickness, "e" and "F" are the elongation and force in equilibrium at the end of the test.

Production with Safety in Rubber Factories

Safeguarding the Health and Life of the Worker Is an Economic as Well as Humanitarian Essential

By J. A. Bowerman

Assistant General Production Superintendent, The Fisk Rubber Co., Chicopee Falls, Mass.

PRODUCTION without due regard for the safety of those who are producing is criminal waste and should be punishable by law. The injured employee and the employer always lose whenever an accident occurs. The only winners are the undertaker, the doctor, and the insurance company, and the few dollars gained by them because of someone's misfortune come from the dear public who pay for accidents through higher retail prices.

Life Conservation as Important as Dividends

The conservation of human life through prevention of accidents is just as important as production, sales, or dividends and has a decided effect on each. Recognition of this fact will have marked bearing on production costs.

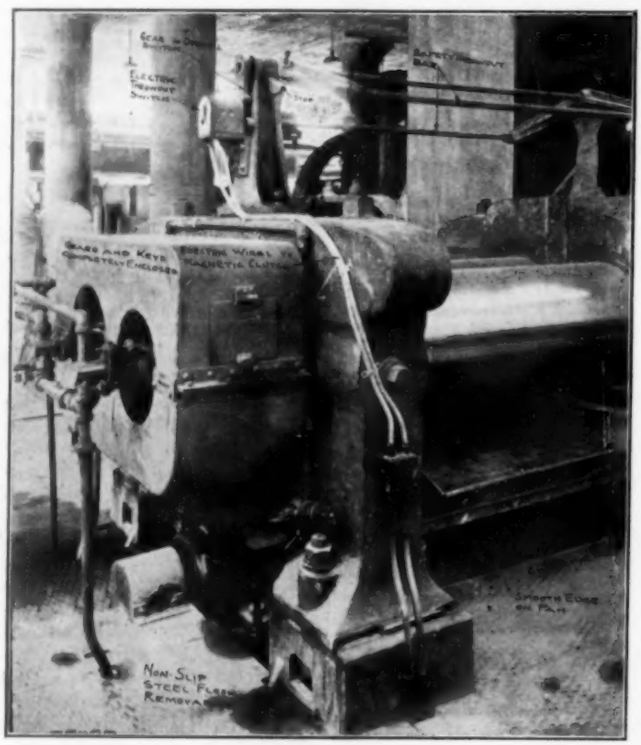
The factory manager in one of the large rubber companies recently caused the following message to be distributed to all employees:

"As factory manager I feel a personal responsibility for the safety of every plant employee, and would not knowingly ask anyone to undertake any work involving the danger of personal injury or loss of life.

"Whenever production is increasing and new employees are being added to the force, then even greater than normal effort must be made in connection with safety work.

"Our aim is Safe Production—that is "Safety First"—combined with quality and quantity, while in many plants production means get out the goods and possibly give a little attention to safety."

This sentiment proves that the factory manager in question was well fortified with human sympathy and appreciative of the terrible losses to employer and employee resulting from accidents. In addition he is a good manager from a business viewpoint.



SAFETY DEVICES INSTALLED ON DOUBLE TYPE OF TUBEWOUT

The factory manager, responsible as he is for the conduct of business in the factory, must overcome all obstacles and run his plant economically and efficiently. He must be able to deliver the goods. The attitude toward safety of employees as expressed by the factory manager is reflected throughout the entire organization, provided his organization is efficient.

As we well know, his production department is his largest unit. There are many other departments which aid production, none of which would be needed for any other purpose.

The production superintendent primarily is engaged in supervising production. He is expected to produce to capacity as a general rule quality goods at minimum cost. Too frequently production supervisors have been lukewarm on the subject of accident prevention, only because they had become so absorbed in producing that they have failed to appreciate the true meaning of accident prevention work. Such men are shuffling around on their jobs, and have no place in modern industry.

A popular impression exists that the production man is "hard boiled," thinks only of production, and has very little use for the safety movement. This is probably true in some plants, and certainly has been true in many in the past.

Reducing Accidents Cuts Production Costs

The production superintendent must appreciate that he cannot produce at minimum cost unless accidents are reduced. There never was a time in the rubber industry when it was more necessary to keep costs down than at present. Realizing this fact, he will not allow accidents to occur if he can possibly avoid them. Workmen's compensation laws in effect in practically every state in the union have done much to awaken the employer to a full appreciation of his responsibilities.

Can you imagine a plant in our industry a few years ago not conversant with the merits of accident prevention work? Men were hired with no effort to place them at work for which they were fitted. The foreman usually selected his own help and the only test of fitness was appearance. Men with hernias and bad hearts were placed at work requiring exertion which they could not stand with safety. Men with poor vision were frequently asked to work where the best vision was necessary. In the entire plant probably not a belt, gear, or other mechanical hazard was guarded, poor ventilation existed in many spots, and little or no attention was paid to proper lighting facilities or conveniences for cleanliness. The employee was merely a thing to be worked to the limit of his capacity, and if he died on the job—get another and try to kill him. This is not an exaggeration but a statement of facts. Accidents were common in those days.

The awakening came in some sources from the more humanitarian employer through love for his fellow man; in other cases, when he learned the effect on his production costs, and the compensation laws had much to do with his education.

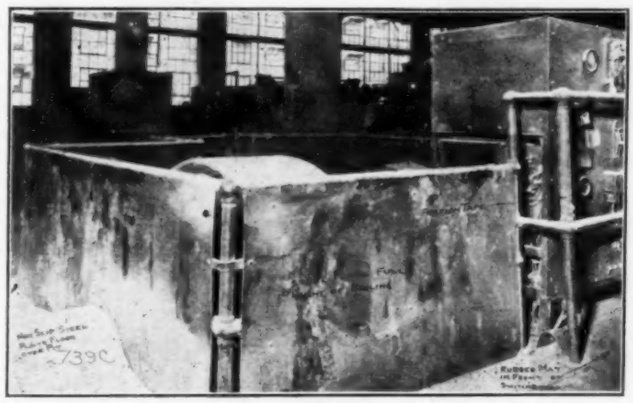
Once the management appreciates the needless expenditure because of high insurance rates caused by bad experience, even though there is no human sympathy apparent, something will be done to change conditions. The usual procedure is to safeguard the plant mechanically, give more careful attention to the placement of men, and make an attempt to educate all within the organization from the factory manager down to avoid accidents because of the terrible waste.

Paper read at the Annual Conference of the National Safety Council at Detroit, Mich., Aug. 28-31, 1922.

Human Machinery the Most Valuable Asset

Today we find physical examinations at the time of employment, conducted for the purpose of placing men at work for which they are physically fit. We find the employer providing suitable washrooms, adequate toilets, clothes lockers, good light, proper ventilation, careful regulation of temperature, in fact, doing everything possible to maintain a healthy, contented working force. In the event sickness or accident does occur he supples hospital facilities where the sick or injured employee may receive immediate treatment by competent doctors and nurses, thus preventing many serious infections and much loss of time. As a general rule the employer furnishes better medical attention, either through equipment established at the plant or specialists suggested, than the employee would be likely to obtain if left to his own resources. There is a further disposition to assist the man by making it possible for him to return to some light work several weeks before he is able to return to his old job after a severe illness or accident, and further to see that he gets the compensation to which he is entitled promptly and in full. All of this is being done by the employer because he recognizes that it is good business.

I believe we have come to appreciate that our human machinery is the most valuable asset we have. Without it we do not need machines, and we have no need for a sales department. In fact, there are no white collar jobs unless the men with the overalls are producing.



STEEL PLATES AND PIPE RAILINGS COVERING GEARS AND SWITCHBOARD

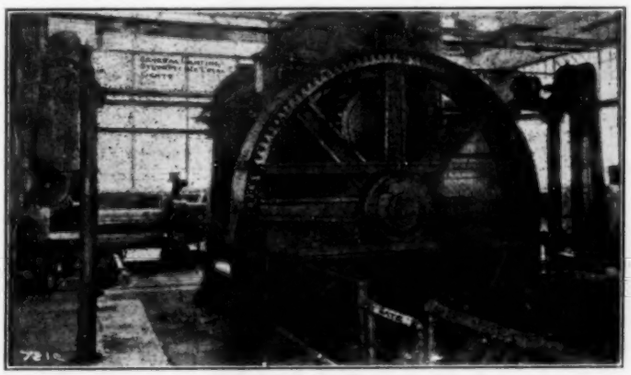
There is perhaps no ground where there is greater mutual interest between employer and employee than offered by the work of accident prevention. To the employee accidents mean loss of wages, possible crippling for life, reduction of earning power, perhaps death; to the employer, loss of production, expense of breaking in new men, spoiled goods, and higher insurance rates. Even though accidents are not of a serious nature they are expensive because they must be treated, and a great deal of time is lost in having these small cuts and scratches properly cared for.

Accident Prevention Work Pays

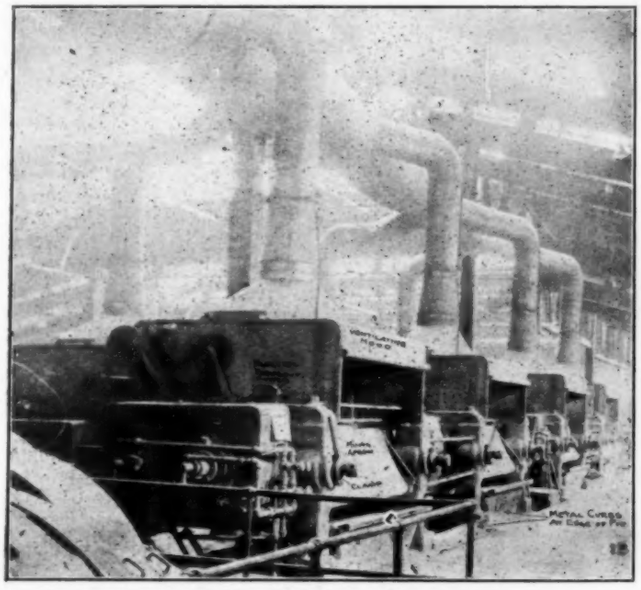
Industry was the first to recognize that many accidents were preventable, and approximately twelve years ago the first steps were taken by industry to prevent these accidents. Much has been accomplished. Almost unbelievable reductions have been made by many concerns who have engaged in accident prevention work.

Early in the war against accidents it was discovered that mechanical safeguarding, although desirable and necessary, was wholly inadequate alone to handle the job of reducing accidents. It is true that the accidents prevented were probably of a serious nature.

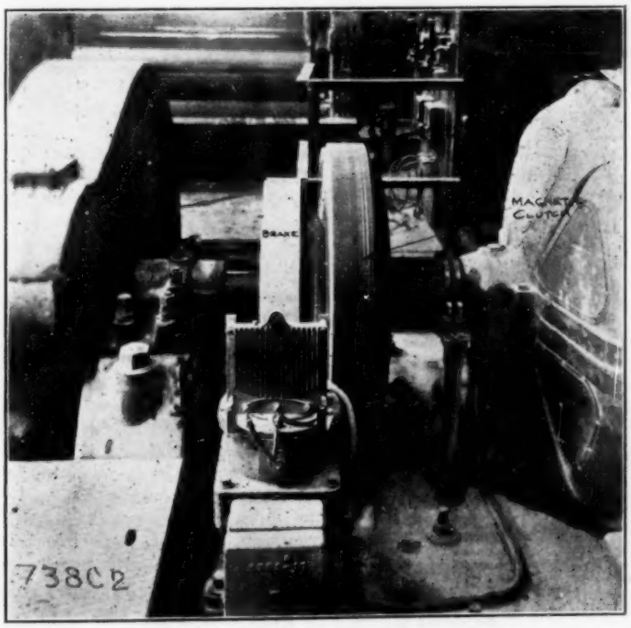
It was learned that the majority of accidents were caused by human errors and that the only way in which these accidents might be eliminated was by bringing about a condition in the minds of the workmen which would cause them to be more careful.



NON-SLIP FLOOR UNDER CALENDER, GATE, AND WHEEL GUARDS



SAFETY VENTILATING HOODS AND AIR DUCTS ON MILLING MACHINES



ELECTRIC WIRING FROM SWITCH TO MAGNETIC CLUTCH WELL PROTECTED

"Selling Safety" to Employees and Public

Some people refer to it as education, others as "selling safety." We will all agree that it is a difficult task either to educate, or to sell the safety habit to, the average employee. Perhaps he is past the educating point. He is in the plant for one purpose, to earn money to support his family, and the more money he is able to earn the better he likes his job. It is a mighty difficult thing to get this individual to take the subject of accident prevention seriously.

It has become during the past few months more clearly recognized that industry is not responsible for all the accidents. With the increasing number of automobiles on the highways there is a terrible toll of lives annually, and the list of fatalities because of accidents outside of industry is appalling.

Moral Responsibility and Team Work

To gain the best results the work of preventing accidents must be carried out in a systematic way. The assistant superintendents, general foremen, foremen, and inspectors must accept the moral responsibility for the safety of employees. If there are any members of the production supervisory force who do not team in they should be shown the way in or the way out. We must have no half-hearted efforts. The bulk of the work will fall upon the foremen and inspectors. It is up to each supervisor so to mold the minds of his men that they will practice safety because they want to and not because they have to.

The production supervisors should be called together at least monthly, and more often if necessary, by the superintendent for the purpose of discussing accident records, study of causes, and the taking of whatever steps seem necessary to cut down accidents. These conferences have the effect of keeping up the interest, and the thorough knowledge of conditions brought out permits the men to deal more intelligently with the conditions or people who are causing the accidents.

The safety department can be of considerable assistance to the production men by furnishing statistics which will further increase their understanding of the causes of accidents. Through bulletin boards the safety department reaches the employee, also through the plant publication, with information relative to general conditions, also specific instances peculiar to the industry. Further good may be accomplished by other forms of publicity, all of which is intended to awaken the workmen to avoid injury. The safety men and hospital attendants can further assist by talking to the individual who has been injured, and as a rule he becomes a booster after he has learned the lesson.

Instructing the New Employee

The foreman must see that the new employee is thoroughly instructed relative to the dangers connected with his job, and advised of what to do and how to do it. The foreman's knowledge of accidents which have occurred in the past within his department places him in a postion to do this intelligently. The new man should be cautioned about his clothing, cautioned against wearing loose sleeves, flowing ties, and finger rings about machinery. His work may require goggles or gloves, perhaps some special kind of clothing. In this case the foreman should see that he is supplied. He should be cautioned against the practice of neglecting minor injuries. The foreman must study his men and win them over as best he can. Sometimes it requires tact; sometimes it requires an accident.

The foreman should converse freely with his men relative to the accident hazards of the department, accepting any meritorious suggestions advanced which will tend to reduce accidents, and make the necessary corrections. He must have the backing of the management, and corrections must be made at once or the workman will feel that the company is unwilling to do its share. He will find that no matter how thoroughly his machines are guarded he will continue to have accidents. He must keep safe production constantly on his mind and remove every known accident hazard.

Accident Hazards in Rubber Factories

In the rubber industry there are several well known accident hazards. Mill and calender rolls offer perhaps the greatest opportunity for crushed hands. These machines should be equipped with modern safety devices and the men made to understand the danger and possible result of being caught in the rolls.

Knives and shears are used extensively in many departments. Employees must learn to use them properly, and further to care for them properly when not in use. Many cuts may be avoided by the exercise of a little care. Heavy equipment such as molds and cores are common accident hazards through improper handling, too much haste and butterfingers resulting in fractured bones.

Bad strains and sprains often occur from handling heavy objects. Many times this could be avoided by use of chainfalls. Burns are not uncommon in some departments, due to methods used in manufacture. Slivers, scratches, and foreign bodies in the eye are more or less common, and not serious if promptly cared for by a competent person.

There are many other causes, such as slipping on the stairs, on the level, falling from ladders, striking against objects or between objects, and so on.

The foreman must insist on careful handling of equipment. It is the outstanding cause of injuries in our industry. He must insist on immediate treatment for all injuries and the necessary redressings until all possible chance for serious consequences have diappeared. Whenever an accident occurs it should be carefully investigated at once by the foreman and reported to the proper parties. The injured person should be given the best possible treatment by competent doctors and nurses. Everything should be done to guard against a repetition of an accident.

The accident record of any foreman indicates whether or not he is filling his position satisfactorily. If his accident record is poor, the chances are his other work is all below par. The production superintendent should scan the records carefully and bring pressure wherever needed and not fail to compliment where it is deserved.

Scientific Management for Rubber Mfrs.

(Continued from page 388)

size and number of tubes in that particular heat. Until further notification from the heat dispatcher all tables run on the size originally assigned to them.

"When the operator has rolled the heat, he shall bring his job card back to the dispatcher's booth. The heat dispatcher has tally cards on a clip dispatch board for every rolling table in the department. These tally cards are in triplicate. The three copies of the tally cards are punched at once. Two of them are sent to the timekeeping department as a pay record for the operator and his table partner. The third copy of the tally card is used for obtaining production reports from the rolling tables and then sent to the dispatch office where the tally cards are accumulated and form the basis for production records.

"Every two hours the heat dispatcher shall make a report of all tubes rolled in that period as shown by the punches in the tally cards. This report is checked up in the dispatch office. Whenever a table must stop work for the lack of stock or poles, the fact is to be reported to the heat dispatcher by the foreman as soon after the interruption as possible. The dispatcher must enter the delay on his idle machine report and take immediate steps to remove the cause of the delay. Whenever the information comes to the dispatcher from the dispatch office that any size of tube in production is falling behind the schedule, it is the duty of the dispatcher to follow that size through all operations personally and see to it that they get to their destination as soon as possible."

The above method is based on the principle of controlling production by the exception to the normal. The schedule is followed as laid out and means are provided for notifying the dispatch office of any interruptions at the machines. Whenever the interruptions take place, steps are promptly taken to remove the causes. This takes care of all the immediate needs of the department. If the interruptions are of a more fundamental nature, the planning department or the production superintendent take a hand.

NEWS OF THE INDUSTRY

Chemical Show to Excel All Previous Expositions

Reports indicate a keen interest this year on the part of both exhibitors and chemists. Over 400 exhibitors have arranged for show spaces this year.

THE Eighth National Exposition of the Chemical Industry, Grand Central Palace, N. Y. City, throws open its doors to thousands of chemists and others interested in this field on Monday, September 11 to stay open that whole week. At the time of going to press the management of the exposition announced that this show will be by long odds the greatest exhibit ever held. Four floors are being used to take care of the displays of the exhibitors.

The plans of the exhibitors are, on the whole, more comprehensive than in previous years. The technical programme is larger and more varied than usual. In addition, new motion pictures showing chemical plants and processes have been secured. Attendance records should all be broken.

The programme of events and titles of articles to be read were given in the August 25 issue of THE RUBBER AGE.

Of the large number of exhibitors a goodly proportion have shows of great interest and value to the rubber field. The following descriptions should serve as a guide to the rubber man attending the show. Every company here listed is showing something of interest in this field and the exhibits should not be overlooked.

ABBE ENGINEERING CO., 50 Church Street, New York City, Booths 78-79. Show a complete line of pulverizing and grinding machinery. Of special interest to the rubber trade are the Rotary Cutters with new features and improvements. Actual machines are in operation. The booth is in charge of H. F. Kleinfeldt, Secretary of the firm.

ALLIS - CHALMERS MANUFACTURING CO., Milwaukee, Wis. Display the following equipment:

Rubber lined Pump, Bronze Pump, small transformer, Pulverator, "SAR" Motor, "AA7B" Compressor, "E" Motor, "AR" Motor, "R" Potential Starter.

This exhibit is under the general direction of Mr. A. F. Rolf, Manager of the New York District Office.

AMERICAN ANILINE PRODUCTS, INC., 80 Fifth Ave., N. Y. City, Booth 225. A complete line of aniline colors, chemicals and intermediates. George L. Armour and R. P. Gould in charge.

G. SIEGLE CORPORATION OF AMERICA, Rosebank, S. I., Booth 224. Dry colors and lakes. Chas. Poppe and E. Gommel in charge.

HEYDEN CHEMICAL CO., OF AMERICA. Garfield, N. J., Booth 226. Chemicals for medicinal and technical purposes. Mr. Preston Furman and George Tewes in charge.

EXHIBITORS OF INTEREST TO THE RUBBER TRADE

Abbe Engineering Co., *New York City*
Allis-Chambers Co., *Milwaukee, Wis.*
American Aniline Products Co., Inc., *New York City*
American Hard Rubber Co., *New York City*
Benzine Condensation Co., *New York Mity*
Bristol Co., *Waterbury, Conn.*
Brown Instrument Co., *Philadelphia, Pa.*
Buffalo Foundry and Machine Co., *Buffalo, N. Y.*
Carrier Engineering Co., *Newark, N. J.*
Cooper-Hewitt Electric Co., *Hoboken, N. J.*
Day, J. H., Co., *Cincinnati, Ohio*
De Laval Separator Co., *New York City*
Devine, J. P., Co., *Buffalo, N. Y.*
Diamond State Fibre Co., *Bridgeport, Conn.*
Eimer and Amend, *New York City*
Foxboro Co., Inc., *Foxboro, Mass.*
Freeport Sulphur Co., *New York City*
General Electric Co., *Schenectady, N. Y.*
General Bakelite Co., *New York City*
Hayden Chemical Co., of America, *Garfield, N. J.*
Hunter Dry Kiln Co., *Indianapolis, Ind.*
Industrial Chemical Co., *New York City*
A. Klipstein & Co., *New York City*
Kewaunee Mnfg. Co., *Kewaunee, Wis.*
Lunkenheimer Co., *Cincinnati, O.*
Luzerne Rubber Co., *Trenton, N. J.*
Mallinckrodt Chemical Works, *St. Louis, Mo.*
N. J. Zinc Co., *New York City*
Pfandler Co., *Rochester, N. Y.*
Roessler and Hasslacher Chem. Co., *New York City*
G. Siegle Corp. of America, *Rosebank, S. I.*
Schaeffer and Budenberg Mnfg. Co., *Brooklyn*
B. F. Sturtevant Co., *Hyde Park, Mass.*
Tagliabue, C. J., Mnfg. Co., *Brooklyn, N. Y.*
Whitall Tatum Co., *New York City*

AMERICAN HARD RUBBER CO., 11 Mercer St., New York, Booths 219-220. Are showing hard rubber equipment to demonstrate the corrosive resisting properties of their product. Their principal exhibit is an all hard rubber Centrifugal Pump in actual operation pumping into a glass globe mounted on the top of a large beautifully polished hard rubber column.

There are also shown the standard sizes of single and double acting hard rubber pumps representing a complete line of pumps of this type. Non-corrosive tendencies of hard rubber are vividly shown by sections of hard rubber pipes immersed in many of the most corrosive liquids known to the chemical engineer.

Hard rubber lined acid tank cars are already in operation and have proved successful. The manner of applying hard rubber lining to iron or steel tanks is demonstrated in a small way. In addition photos of actual installations in commercial plants are shown. Messrs. D. Wilkins and C. R. Ackerman are in charge of the booth.

THE BENZINE CONDENSATION CO., New York City, exhibit occupies a corner space on the fourth floor close to the conference room. Photographs and blue prints of solvent recovery machines that are in operation in different mills are shown; among them being an interesting picture of an installation of five machines in one plant that recovers 590 gallons of gasoline each day. A feature of the exhibit is a demonstration model of one type of the company's solvent recovery apparatus. A large placard calls attention to the recent statistics of the Department of Commerce which show that during the year 1919, there were consumed in the rubber plants in the United States 4,168,363,961 gallons of gasoline at the total cost of $754,960,771. The claim is made by the exhibitors that at the very least 50 per cent of this vast amount of gasoline could have been recovered. President P. Wilcox Gumaer was assisted by T. H. Hagadorn and Miss N. E. Dredge in demonstrating to visitors the various types of solvent recovery apparatus.

THE BRISTOL COMPANY, Waterbury, Conn., exhibit their entire line of indicating and recording instruments consisting of:— Pressure Gauges, Tachometers, Time Recorders, Thermometers, Thermometer-Thermostats, Controllers, Psychrometers, Voltmeters, Ammeters, Wattmeters, Indicating and Recording Pyrometers and Bristol Automatic Controls.

Those in attendance are Mr. H. L. Griggs, General Sales Manager, Mr. L. G. Bean, Boston District Manager, Mr. C. W. Williamson, New York District Manager, Mr. G. H. Gaites, Mr. J. L. Williams, and several others.

BROWN INSTRUMENT CO. Philadelphia, Pa., Booth 41. Exhibit a complete line of Indicating & Recording Pyrometers, Recording Thermometers, Resistance Thermometers, Pressure Gauges, Tachometers, and Time and Operation Recorders.

Many notable recent developments are exhibited, namely, Automatic Cold End Compensation which does away with cold wells in pyrometers, and takes the extention leads to the instrument where

changes in cold end temperatures are automatically compensated by special device. Special attention is given to the very rapid improvement in automatic temperature control, especially the balanced type of control which we alone manufacture, and the Automatic Signalling device, both balls and lights. Also the Direct Reading Resistance Thermometer which will give readings to 1/5° F.

The booth is in charge of J. P. Goheen, Secretary, and G. W. Keller, Sales Manager, and is represented by J. D. Andrews, N. Y., District Mgr., Geo. Goodman, N. Y., Representative, M. Mark Watkins, George B. Beck, V. Van Vliet and E. C. Reid, Advertising Manager.

BUFFALO FOUNDRY AND MACHINE CO., Buffalo, N. Y. Booth 48. Exhibit consists of vacuum drying and evaporating equipment. C. W. Pearson, Sales Manager is in charge and is assisted by a corps of engineers who are specialists in the chemical industry.

CARRIER ENGINEERING CO., 750 Frelinghuysen Ave., Newark, N. J.

Show the Carrier Processing Cabinet, a complete unit air conditioning installation, with its own processing chamber, suitable for experimental, developmental and standardization work. This machine also demonstrates the general principles involved in air conditioning, illustrating the manufacture of weather for the purpose of making "Every day a *good* day" in the modern industrial plant. Those present are J. E. Bolling, in charge, W. H. Carrier, J. I. Lyle, L. L. Lewis, M. S. Smith, R. H. Ward.

COOPER HEWITT ELECTRIC CO., Hoboken, N. J. Booths 416-417. Are exhibiting in addition to their reguar line of factory lighting equipment, The Uviare Test Cabinet, Uvaric Laboratory Lamp, The Lab-Are. Demonstrations of flourescence are given.

J. H. DAY CO., Cincinnati, O., Are exhibiting mixers and grinders used by the manufacturers of chemicals and druggists, in dry color and other chemical lines. There is also some sifting machinery that has been sold quite largely to the rubber trade, also some small laboratory equipment in the way of hand operated — and direct connected motor driven equipment for experimental work. Booth is in charge of R. W. Wallace, New York Manager.

J. P. DEVINE CO., Buffalo, N. Y. Exhibit only includes photographs of Devine apparatus as actually installed. The booth is completely fitted for the convenience and comfort of visitors. In attendance are Messrs. J. P. Devine, C. P. Devine, L. W. Graves, A. N. Howes and W. H. Maier.

EIMER AND AMEND., New York City, Booth 58. Are exhibiting a line of general laboratory apparatus including *Young's Gravitometer* for Determining the Specific Gravity of Rubber, *Mac Michaels Viscosimeter* for Determining the Viscosity of Rubber Solutions, Extraction Apparatus for Determining the Amount of Rubber by Extraction. F. W. Shulenberger, Sales Manager and E. P. Churchill, Ass't. Sales Manager in charge.

FOXBORO CO., INC., Foxboro, Mass. Booth 405. Are displaying on panels for convenient inspection of visitors a representative selection of Recording and Indicating Instruments and Controllers. Their many applications and the remarkable savings effected through their use in the different branches of the chemical industry will be of interest to every technical man and owner who visits the show.

The exhibit will include the following instruments in operation: Foxboro-Heath Co. Recorder, Temperature-Controller - Recorder, Humidity - Controller-Recorder, Water box with Motor-Driven Blower.

In addition to the above other instruments are displayed, such as Recording and Indicating Thermometers, Gauges, Liquid Level, Gauge and Orifice Meters. W. E. Booth, Sales Engineer is in charge. Others in attendance are W. W. Patrick, L. H. Du Paul and C. C. Fuller.

GENERAL BAKELITE COMPANY, 8 West 40th Street, New York City, Booth 18. Are exhibiting Bakelite Raw Materials and finished products manufactured from them as follows: Agitators, airplane propellers, beads, bowling, billard and pool cue-balls, bushings, camera-frames, dental-lamps, distributor heads, electric drill parts, fire- extinguishers, gears and pinions, impregnated fibres, instrument-tops and handles, insulators, jewelry, knife handles, oil-test cups, ornaments, pipe-stems, pistol-grips, switch-blocks, telephone- instruments, water-ozonator parts, welding goggles, wire-insulation and wireless apparatus.

Hylton Swan is in charge. L. M. Rossi, C. H. Hall and G. H. Roll, representatives are also attending the exposition.

HUNTER DRY KILN CO., Indianapolis, Ind., Booth 39. Are exhibiting a model of the Hunter Dryer, along with a working model of the Rotary Agitator. This latter is a new machine designed especially to handle reclaimed rubber. It has already been adopted by some of the most representative reclaimers, and they are very enthusiastic over the quality and uniformity of the material turned out by it.

In principle it is a series of revolving shelves half enclosed by a cylinder. As the blades or shelves revolve, the material is lifted into the air and caused to drop again into the half cylinder below, where it is again picked up as the blades complete their circle. In size the agitator is designed to take the charge as it comes from the digestor. This machine is placed inside of a standard Hunter Dryer.

Those in charge of the booth are Paul R. McCampbell, Arthur B. Stonex, Oren M. Ragsdale.

INDUSTRIAL CHEMICAL CO., 200 Fifth Ave., New York City, Booth 233. Have a joint exhibit with the Suchar Process Corporation of the same address. The exhibit has particular reference to Super-Filtchar and Suchar, which are very powerful Decolorizing and Deodorizing Carbons for the treatment and purification of various products, including Edible Oils, Pharmaceuticals and Sugar Solutions.

Representatives at the booth include J. Wrench, Sales Manager, Messrs. J. J. Naugle, L. Wickenden and B. N. Glick.

KEWAUNEE MFG. CO., Kewaunee, Wis., Booth 290, 291. Are exhibiting Standardized Laboratory Table and Furniture. Their new "Volvic" white top for chemical tables is being shown for the first time. This top, it is claimed, is acid and heat proof and is not breakable like glass tops. Mr. O. T. Lonis of the Scientific Equipment Co., N. Y. Representative, is in charge. James A. Campbell of the factory and others are also in attendance.

A. KLIPSTEIN AND CO., New York City. Are showing a cross-section of their warehouse. Their line of chemicals, dyes, gum, albumen, etc., is exhibited in the original containers such as kegs, boxes, burlaps, etc., all labeled with their trade marks. Messrs. M. S. Wixson and A. Klipstein, Jr. are in charge.

THE LUNKENHEIMER CO., Cincinnati, Ohio, Booths 260, 261. Have an attractive and complete exhibit of valves, lubricators, oil pumps, oil cups, grease cups, boiler mountings and similar engineering specialties.

The line of valves made by this company and known as their combination 'SA' for use where acids detrimental to bronze and iron are encountered. These valves are constructed of an alloy especially adapted to withstand sulphuric acid, caustic soda and other liquids.

In addition to the combination 'SA' valves, the display also consists of engineering products made of bronze, iron, cast steel and other special alloys suitable for practically any service.

J. E. Cooper is in charge of the exhibit and is assisted by several other representatives.

LUZERNE RUBBER CO., Trenton, N. J. are exhibiting a general line of hard rubber products, standard and special, paying particular attention to those parts which are of interest to the chemical trade; such as hard rubber pipe, fittings, buckets, funnels, etc., for the handling of acids and corrosive materials. Are also showing a new screw stem valve made of hard rubber which has been developed within the past year, and also a sample of hard rubber centrifugal pump. H. E. Case is in charge of the exhibit, and W. Ulmer is also in attendance.

MALLINCKRODT CHEMICAL WORKS, St. Louis, Mo., Booth 334. Show a line of chemicals divided into five sections, as follows: reagent chemicals, medicinal chemicals, photographic chemicals, industrial chemicals, household chemicals. The line of reagent chemicals has just been added.

N. J. ZINC CO., New York City, with which are combined the exhibits of The Mineral Point Zinc Co. and The New Jersey Zinc Sales Co.

Specimens of products made by the Zinc Company are on exhibition as well as commodities into which they enter as raw materials. This year, again, the

"flow sheet" which has characterized former Zinc displays forms a prominent part of the exhibit. Zinc leaders, gutters and other roof fittings are shown.

W. H. Hendricks, General Sales Engineer, is in charge. He is assisted by Messrs. S. T. Ballinger, V. A. Belcher, E. W. Boughton, C. A. Smith, A. E. Mervine, S. C. Reynolds, C. D. Brothers, H. W. Henderson, W. J. Keuhn and by other sales representatives.

THE PFANDLER CO., Rochester, N. Y. The exhibit includes a Standard Glass Enameled Open Tank which is generally used for temporary storage, intermediate storage and holding purposes; a Glass Enameled Jacketed Mixer, furnished with an enameled steel agitator which is extensively used in the manufacture of raw chemicals, dyes, printing inks, coal tar by-products, etc.

Also exhibited are various fittings and accessories which regularly go with the equipment, viz., reducing ells, enameled agitators, observation glasses, and photographs of various installations in the field.

The list of representatives in attendance during the week is R. B. Kilmer, W. D. Pheteplace, I. E. Colvin, J. A. Cowles, P. S. Barnes, T. D. Wilson.

ROESSLER AND HASSLACHER, 709 Sixth Ave., New York. Booth 92. Are exhibiting numerous chemicals employed by the rubber trade. Among the pigments are shown Antimony Sulphurets, Alumina Earth (Clay and Kaolin), Magnesia (light and heavy), Magnesium Carbonate (light), Sulphur, Iron Oxides, Whiting, Zinc Oxides, Chrome Yellow, Chrome Green and Lithopone.

Among the accelerators are: Hexamethyleneteramine, Formaldehyde Aniline (Methylene Aniline), Aldehyde Ammonia, Thiocarbanilide, Diphenylguanidine.

Representatives of the technical and sales forces are present daily. C. S. Williams, the firm's technical representative will be in attendance on September 12 and 15.

SCHAEFFNER & BUDENBERG, 338 Berry St., Brooklyn, Booth 65. Have a combined exhibit with the American Steam Gauge and Valve Mfg. Co.—the new division recently taken over. The exhibit shows a complete line of Efficiency Promoting instruments as Pressure Gauges, Thermometers, Recorders, Temperature Regulators, etc. A temperature regulator is seen in actual operation. In attendance are Messrs. H. Z. Carlier, Sales Promotion Mngr. and Fred Undeutsch.

B. F. STURTEVANT CO., INC., Hyde Park, Mass. Booths 227-231. Have on exhibition a model of the Sturtevant Brownell Spiraled Rotary Dryer, a Cabinet Tray Dryer, a Hosiery Dryer, a fan for handling Acid Fumes and a Ready-to-Run Portable Ventilating Set. The booth is in charge of Lucien Buck, Manager of the Industrial Drying Dept. and his assistant, Mr. Eisentrager.

C. J. TAGLIABUE MFG. CO., Brooklyn, N. Y. The company exhibits some of its representative products, namely:

The TAG Automatic temperature-humidity controller. This controller automatically maintains the required relative humidity and dry-bulb temperature by regulating the valves on a heating coil and spray line.

Tag Automatic Controllers of temperature, pressure, vacuum, time, liquid-level and condensation-discharge which the company claims, assure uniformity in processes, save time, require no attention and reduce steam consumption.

Tag Industrial Thermometers, Chemical Thermometers and Hydrometers.

The improved form Tag Recording Thermometer, which embodies an improved operating mechanism, the use of any evenly graduated chart, non-corrodible, inverted pen-arm, micrometer pen adjustment, pen pressure adjustment, pen-lifting device.

Tag-Mono Automatic Gas Analyzing Instruments which produce continuous graphic records of the percentages of certain gases, such as CO_2, CO, H_2, SO_2, CH_4, N_2, etc. present in varying gas mixtures.

Tag Oil Testing Instruments.

L. C. Irwin, General Manager; T. Dougherty, Sales Manager; V. Wichum, Engineer; R. M. Wilhelm, Technical Adviser; F. D. Harger and A. Traudt, Engineers, represent the company at the booth.

WHITALL TATUM CO., 42 Barclay St., New York. Booths 271-272. Are showing an exhibit of their "Nonsol" chemical glassware. In charge, W. W. Siggis, Sales manager.

Chemical Exposition Notes

This year's National Exposition of Chemical Industries will be held at Grand Central Palace, a few minutes' walk from Grand Central Station, New York City. This will mean added convenience and comfort to the thousands who will attend, since the 1921 show was held at the Eighth Coast Artillery Armory, a subway ride of forty-five minutes from Grand Central.

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The elaborate motion picture program planned for the 1922 exposition has necessitated the arrangement of separate auditorium facilities for films and speakers on the fourth floor of Grand Central Palace. There will be movies of chemical plant activities and processes every evening from Sept. 11 to Sept. 16, and the reading of papers and discussions thereon every afternoon.

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William A. Durgin of the U. S. Department of Commerce is a late addition to the Standardization Program of the Chemical Exposition, which will be held on Friday afternoon, Sept. 15, under the direction of the New York section of the American Chemical Society. Dr. Martin H. Ittner will act as chairman.

* * *

If the chemical and chemical equipment industries which will be represented at the 1922 exposition should cease operating for one year, every vital industry of the United States might be forced to suspend operations before the expiration of that period.

Akron's Chief Now Firestone's Assistant Treasurer

Homer C. Campbell, who was appointed city manager of Akron, Ohio, on Jan. 24, 1922, has resigned to accept the position of assistant treasurer of the Firestone Tire & Rubber Co., of Akron. His selection by the city council last January came as the culmination of a sensational political episode in which William J. Laub, city manager for the two preceding years, was removed after refusing to resign at the request of the new council.

Mr. Campbell said he had no complaint to make, but the indefinite tenure of the office and the financial difficulties of the city made it virtually impossible for a city manager to do the constructive work which he felt should be done; therefore he had accepted the Firestone offer. M. P. Tucker, service director, was chosen as city manager in place of Mr. Campbell.

Miller Sales Increase 28 Per Cent

An increase of 28 per cent in gross sales over a year ago is shown by the report of the Miller Rubber Co. for the first six months of this year, the figures being $12,119,741.77 as compared with $9,445,822.43 in 1921. There was an increase of 100 per cent in unit production and sale of tires. Net profits after allowing for interest, depreciation and other charges except federal income tax were $1,026,317.88. The regular two per cent dividend was declared on the preferred stock and a one per cent dividend to apply on the accumulated preferred dividends remaining unpaid.

Two new low-priced fabric tires, called "Rellim" (the Miller name reversed), in sizes 30 x 3 and 30 x 3½, and a full range of popular-priced cord tires with wedge tread, under the same brand, have been added to the line.

Firestone Resumes Heel Making

Firestone officials contemplate resuming the manufacture of rubber heels on a large scale in the near future, according to the latest report from Akron. Full equipment for this purpose has been overhauled and re-installed and the south-end plant will be devoted to this branch.

Lambertville Increases Capital

The Lambertville Rubber Co., Trenton, N. J., has increased its capital stock from $24,000 to $750,000 in an amended certificate of incorporation filed with the New Jersey secretary of state. The new executive office is at 703 Broad street, Newark, N. J. John A. Shepard is president; Newell C. Shepard, secretary.

Siemon Rubber to Build Factory

A permit has been issued by the building inspector of Bridgeport, Conn., to the Siemon Rubber Corp. of that city to erect a brick factory building on State street extension. The cost of the proposed structure was not stated.

Rutherford "Bullish" on Rubber Industry's Future

JUST before leaving for Europe recently W. O. Rutherford, vice president of the B. F. Goodrich Co., expressed himself in radiantly optimistic terms in regard to the future of the rubber industry. He said that the United States was on the eve of an era of unprecedented prosperity of which all branches of the rubber business would have their full share.

"I have never seen a brighter outlook nor more hopeful conditions. The minor disorders we have been having in the way of strikes will soon be settled satisfactorily and forgotten; the air will be the clearer; the straight road ahead will be unimpeded," Mr. Rutherford insisted.

"Of course, while I speak generally of conditions in all lines of business, it is the rubber business I know best and about which I am the most competent to talk. But I think you can take the Goodrich company as a very fair index of what is going on in a majority of industries. We for instance, have been so busy supplying an ever-increasing market that we find the 24-hour day all too short. We are obliged to have three sets of employees working in three shifts of eight hours each.

Rubber a Great Basic Industry

"Competition in the rubber industry is keen but fair and it has resulted in a vastly improved industry; an industry that cannot afford any lost motion but which is constantly cutting costs of production by scientific management, and thus effecting a tremendous saving for the buying public. And I should like the public to realize what a tremendous basic industry the rubber industry is. How largely it enters into the life and convenience of the nation is shown by the fact that rubber is largely used in practically every form of transportation, in surgical goods, footwear, trains, airplanes, buggies, gas engines, automobiles, electric apparatus, radio, building construction, toilet articles, household wear, etc . And the uses of rubber are growing daily.

"How fast the rubber industry is taking its place as one of America's business leaders may be judged from the fact that in last month our sales increased 150 per cent over the month of April, and our May and June business, compared with May and June of last year, nearly doubled. Sales of cord tires since January of this year have been double those of the first five months. At this moment our sales are running higher than ever before in the history of Goodrich.

A "Flivver" for Every Workingman

"And the future never looked brighter. I am sure that it is not too optimistic to look forward to the time when every industrious and intelligent workingman will be able to afford a modest automobile. Production of the low-priced cars was never greater than it is today, and scientific competition is so healthy that no one is able to predict how cheaply a car may be put on the market tomorrow. The greater the output of cars the greater, of course, the demand for rubber tires and other automobile equipment. Prosperity in any one line means equal prosperity in all the related industries. So you can see, I'm sure, the sort of hopeful, encouraging message I am gladly carrying from the United States to England, France, and Germany."

Death of Van Henry Cartmell

Van Henry Cartmell, for seventeen years president of the Kelly-Springfield Tire Co. and one of the pioneers of the carriage and automobile tire industry, died on Aug. 23 of pneumonia at the home of his son Robert in Springfield, Ohio. He was 72 years of age. Two years ago, because of failing health, he retired from the presidency of the company which he helped to establish and develop to its present large proportions.

Mr. Cartmell was born on a farm in 1850 in what is now the city of Springfield, Ohio. His father was born there in 1811, his grandfather having settled on the land ten years earlier. Young Cartmell learned his multiplication tables while plowing in the field, and he was self-educated. His first job was clerking in a drygoods store at $5.00 a week. Later he went with the Rhineart-Ballard Co., a farm implement concern, which was taken over by the Springfield Engineering & Threshing Co., of which the late O. S. Kelly was president.

VAN HENRY CARTMELL

E. S. Kelly, son of the latter, organized the Rubber Tire Wheel Co. to make rubber-tired wheels for horse-drawn vehicles and it was he who induced Mr. Cartmell to resign from the threshing company and manage the Boston office of the tire concern. The business was successful, and Kelly-Springfield buggy tires became standard equipment in many countries. The Rubber Tire Wheel Co. was finally merged in 1898 into the Consolidated Rubber Tire Co. and Mr. Cartmell was placed in charge of the business with offices in New York City. He advanced from one position to another until he finally became president.

The motor car was beginning to loom large on the horizon and the company began to manufacture automobile tires. Finally, in 1914, the name of the Consolidated was changed to Kelly-Springfield Tire Co. to identify it with the name of its products. Thus, before he retired, the farmer boy who became its directing head saw the business grow into one of the greatest tire and tube manufacturing plants in the United States.

In 1915 Mr. Cartmell was elected vice president of the Rubber Association of America. A widow and three sons survive him.

Big Crude Rubber Contract

The General Rubber Co. of New York, the subsidiary of the United States Rubber Co. which handles its crude rubber operations, has made a contract with the Anglo-Dutch Plantations to take the latter's output of standard rubber from Oct. 1, 1922, to the end of 1924, after providing for existing contracts. The supply involved is 2,250 tons of crude rubber each year, or more than 5,200 tons in all. The contract is automatically renewable for periods of two years, unless terminated by six months' notice by either of the parties. The price agreed on is said to be the average of the daily quotations for London spot standard quality, calculated monthly, at a minimum of 8d. per pound and maximum of 1s. 4d. per pound. Any export tax which may be imposed will be added to the average price as figured monthly.

Mid-West Ass'n. August Meeting

The Mid-West Rubber Manufacturers' Association held its regular monthly meeting and luncheon at the Hotel Morrison, Chicago, on Aug. 8, W. W. Wuehter, general manager of the Nebraska Tire & Rubber Co., presiding.

The general opinion of those present was that price cutting by some the larger companies had the effect of slowing up the demand for tires, and the uncertainty created by the reduction and the expectation by dealers and the public that other firms will follow, have naturally reduced current sales; also that the price cuts made to stimulate business are having the opposite effect. Reduction in tire prices at this time was unwarranted, due to the fact that the prices of raw materials are as high as a year ago, as also is labor.

Schrader's New Sales Plans

Decree in Federal Suit on License Agreements Heretofore in Use to be Entered By Consent

A bill was field in the Federal Court in Brooklyn on August 31 to restrain A. Schrader's Son, Inc., of Brooklyn, N. Y., manufacturers of valves, gages and pneumatic tire accessories, from the continuance of an alleged violation of the Sherman Anti-Trust Law.

According to the government's complaint, the corporation has issued "licenses" by the terms of which jobbers are required to sell only to manufacturers and dealers designated by the company and at prices fixed by the company, which licenses are revocable by the will of the Schrader company. According to the complaint, it is alleged that this constitutes a violation of the Sherman Anti-Trust Law.

Frank M. Avery of Phillips & Avery, New York City, attorneys for the company, stated to a representative of THE RUBBER AGE that the suit was brought for an injunction to restrain the company from continuing license agreements heretofore employed by the company up to September 1, 1922, and outlined in the complaint, and might be said to be in the nature of a friendly suit, that is, the action will not be opposed by the Schrader company.

"Heretofore the company", said Mr. Avery, "had been selling its products under a form of license agreement with a royalty arrangement and certain price restrictions. There has been recently some change in the management of the company and it was decided for reasons of business policy to adopt an entirely different system of marketing its products and we have been working out the details of the proposed new arrangement for some time. Such new system went into effect on Sept. 1 and we feel confident that the government will have no objections to the new method in any particular, which we feel sure will be a good one for the company and for the trade.

"The Department of Justice decided to bring an equity suit to restrain the company from proceding further under the license agreements which have been referred to. We saw officials of the government and agreed upon a form of decree, to the entry of which the Schrader company will consent, and it was arranged to have the bill filed in the Eastern District of New York at Brooklyn, on or before August 31, while the old agreements were still in force, so that the court would have jurisdiction. Immediately after Labor Day we will appear in the suit for the defendants and will consent to the entry of the decree, inasmuch as the Schrader company cannot have any objection to the restraint of a sales agreement which they have now discarded."

Sales of the Indiana Tire & Rubber Co., Mogadore, Ind., since Jan. 1 have been $1,086.000 with net earnings of $214,419. This represents an eighty per cent increase over last year.

To Make Zinc Oxide in Akron Plant

The International Lead Refining Co., a subsidiary of the Anaconda Copper Co., has purchased seven acres of land at Bettes Corners, fronting on Tallmadge avenue, Akron, Ohio, on which four buildings of structural steel and galvanized sheet iron covering will be erected within the near future. Additional units will be built as rapidly as the development of the company's business warrants. Zinc oxide will be manufactured on a large scale to supply the needs of local rubber factories in Akron as well as the company's customers elsewhere, and other chemical products will also be made.

An arrangement has been effected with the Baltimore & Ohio Railroad to run a spur track 1,000 feet long to the new factory site, and about 2,000 feet of track will be laid on the factory grounds to provide for switching requirements.

The International Company plans to have the initial four factory units completed and in operation with several hundred employes soon after Jan. 1, 1923. The National Sulphur Co. recently announced that it would establish an Akron plant, and other supply concerns may follow suit.

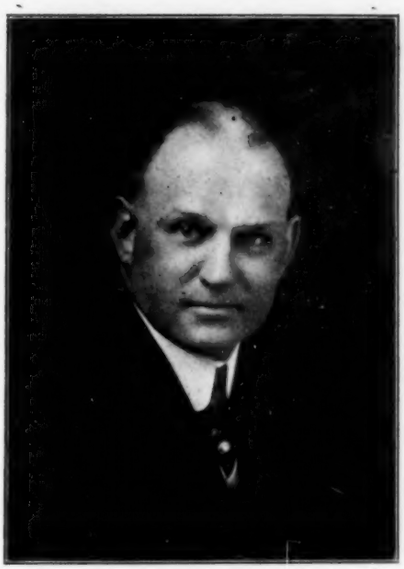
Reorganization of Empire Corp.

A plan has been submitted to the creditors of the Empire Tire & Rubber Corp. providing for the purchase of its assets at the public sale ordered for Sept. 13 by the federal court and for the formation of a new corporation to assume the indebtedness as of Aug. 1, amounting to $2,018,532.32. Financing of the new company will cover $600,000 six per cent two-year notes, to provide cash working capital; $800,000 six per cent gold notes; $1,200,000 seven per cent cumulative preferred stock, $100 par value; and 40,000 shares of common stock, no par value. For each $1,000 of indebtedness each creditor will receive $400 in six per cent gold notes, $600 in seven per cent preferred stock, and ten shares of common stock.

All departments of the business are said to be flourishing under the management of the receivers, and 1,100 workers are employed. The company manufactures tire casings, inner tubes, fire hose, garden hose, rubber mats, mechanical rubber goods, and other rubber specialties.

Will Not Cut Tire Output Now

Goodyear and Firestone officials at Akron say that the proposed shut-down of the big Ford plant at Highland Park, Mich., on Sept. 16 will not cause an immediate cut in tire production at their plants. Heavy automobile touring this year and favorable weather are keeping up the demand for tires and tubes. Capacity production continues in boots and shoes, mechanical goods, and drug and various rubber sundries.



R. B. TRACY
Director of Sales, Paul Rubber Co., Salisbury, N. C.

Tracy Sales Director for Paul

R. B. Tracy, formerly sales manager for the Globe Rubber Tire Co., Trenton, N. J., and previous to that connection for sixteen years with the Michelin Tire Co., Milltown, N. J., has been appointed director of sales for the Paul Rubber Co., Salisbury, N. C. Mr. Tracy has a large circle of acquaintances in the tire industry and is personally known to numerous distributors and dealers. He is considered one of the ablest executives in the selling end of the business.

Paul Has Tirometer Valve

The Paul Rubber Co., Salisbury, N. C., has taken over the output of the Tirometer Valve Co., of Charleston, W. Va., where the valves are being manufactured at present. A new plant for the fabrication of these valves will be erected at Salisbury, ground being broken on Sept. 15. The Tirometer Valve shows the exact amount of air that is pumped into the tire or while the tire is in service.

The Salisbury plant has a capacity of 500 tire casings and 2,000 inner tubes daily. M. W. McConnell is president of the company; R. B. Tracy, director of sales.

Oldfield Anniversary Sept. 21

On Sept. 21 of this year there will be observed the twentieth anniversary of the famous automobile race at Grosse Point, Mich., in which the car "999" built by Henry Ford was piloted to victory by Barney Oldfield who is now head of the Oldfield Tire Co. of Akron, Ohio. At that time his mile-a-minute record was thought astounding; it has since been eclisped many times. Oldfield, who is now 44 years old, officiates as pacemaker at automobile track events in addition to managing the tire company.

Rubber Toy Trade Booming

The lower prices of crude rubber have greatly increased the sales of rubber gloves and toys, according to Norman Swartz, of the Maywald Rubber Company, Nutley, N. J.

"Lower prices of crude rubber," Mr. Swartz said, "have enabled manufacturers of gloves and toys to reduce prices on those products from ten to fifteen per cent. Lower prices have brought about a better consumer demand, and business increased 100 per cent since January 1.

"There is a great demand for rubber toys, because they are non-breakable. Then again price is an important element. Families of moderate means cannot afford a china doll when they are able to buy a rubber doll because of its cheapness and enduring qualities.

"American manufacturers of rubber toys are surpassing foreign competitors. The low price of crude rubber, the duty on imported toys and the improved methods of manufacture in this country have made it possible for domestic manufacturers to compete even with Germany."

New Rubber Ball Factory

The Superior Rubber Ball Co., Lebanon, Pa., has started to manufacture rubber balls of various sizes, styles and colors, some with vari-colored stripes. Unusually large hollow balls, which have become quite popular, are being made plain and in colors. The company is said to have sufficient orders on hand to keep the plant busy for several months.

Criterion Rubber Assets Sale

Referee in Bankruptcy John Keogh, of the United States District Court in Bridgeport, Conn., has granted an order applied for by Morris K. Cohen, trustee of the Criterion Rubber Co., adjudicated bankrupt in July, to sell the property and assets of the company at public sale.

A. A. A. Co. Buys Duplex Plant

Joseph S. Bittenbender and Charles Weisman, of the American Auto Accessories Co., Wilkesbarre, Pa., have acquired the plant of the Duplex Tire & Rubber Co., Morgantown, W. Va., where they will manufacture a patent tire mold recently purchased for $20,000. A number of skilled mechanics, formerly with Goodyear and Kelly-Springfield, have been engaged to work at the plant. National distribution of Duplex tires will be made from Wilkesbarre.

Electric Hose at Capacity

The plant of the Electric Hose & Rubber Co., Wilmington, Del., is reported operating at full capacity, producing about 2,500,000 feet of rubber hose monthly. Beginning in September, a night force will be put on to take care of increasing business. The company states this promises to be the best year it has had under normal conditions.

Goodwin Optimistic

George E. Goodwin of Boston, in charge of the summer convention of United States Rubber Co. salesman, is optimistic as to the outlook for the sales of raincoats and other rubber goods. He says:

"During the recent slump the market was flooded with all sorts of army goods, both imitation and real. The farmer, who makes up the greater part of our trade in standard black surface coats, bought very little and manufacturers could not compete. Now he is buying again, the market is about cleaned up of surplus army supplies, and we look forward to an increased business in raincoats and other lines. The rail and coal strikes have had little effect, but it is to be expected that sales will continue slow in industrial sections for some time to come."

Panco Operating Four Plants

President Frank Bernstein of the Panco Rubber Co. states that at present the four plants of the company, located at Trenton, N. J., Sherbrooke, Quebec, and Stoughton and Chelsea, Mass., are in full operation. The company manufactures Panco soles and taps, Pancord heels, and other lines of rubber goods. Sales of soles and taps are now averaging about 50,000 gross annually. The rubber heel output is 125,000 pairs daily. Between 400 and 500 hands are employed at the Stoughton plant and 150 at the Chelsea plant.

Avalon Becomes Malanite Co.

The former Avalon Tire & Rubber Co. of Barberton, Ohio, which recently passed through a receivership, has been reorganized and reincorporated for $1,000,000 as The Malanite Co. The new concern will manufacture a substitute for hard rubber known as malanite, for radio uses, which can be sold at lower prices.

Receiver for Semple Rubber Co.

Following a complaint of the federal court by the Charles T. Wilson Co., of New York City, that the Semple Rubber Co. of Trenton, N. J., owed $146,030 on overdue notes and was insolvent, J. B. V. Wicoff was appointed receiver. The defendant was charged with being without funds to meet current obligations. The Wilson Co. stated that the defendant company owed it $39,944.

Republic Reports Progress

The Republic Rubber Corp., Canton, Ohio, plant reports that it is producing from 1600 to 1800 tire casings daily and from 75,000 to 100,000 inner tubes monthly. Despite the fact that prices have not been reduced on its tires, gross sales during the first half of August were the largest of any month this year. There are 2200 dealers handling Republic tires.

Goodyear's Rubber Heel Output

Goodyear reports that during the current year so far it has sold 4,000,000 pairs of rubber heels monthly and it is expected that the year's total will aggregate 60,000,000 pairs. At an average retail cost of fifty cents a pair, this would mean a business of $30,000,000 annually for the rubber heel output of a single factory.

Akron's New Footwear Factory

A new plant for the manufacture of rubber footwear and vacuum rubber heels may be brought to Akron, Ohio, by the board of trade. The factory will occupy 3000 square feet and have a present capacity of 200 pairs of shoes or boots daily.

New Goodrich Branch

A factory branch office at Cedar Rapids, Iowa, has been opened by the B. F. Goodrich Co. P. H. Broadies, former manager of the Mason City branch, will be in charge. Seventeen counties will be covered by the Cedar Rapids office.

Great Western Producing

The Great Western Tire & Rubber Co., housed in a new factory at Centerville, Iowa, has begun the manufacture of Arrotrak Kord tires, according to an announcement by President G. Peikenbrock. The equipment of the plant is said to compare favorably with any in that section of the country.

Tire Factory for Moline, Ill.

The Master Tire & Equipment Co., which has just opened a new plant in Moline, Ill. for the manufacture of vulcanizing and tire repair machinery and steam chamber tire molds, will in the near future produce from 400 to 600 tires daily and employ about sixty men. The company is reported to have developed quite an export business.

Trump to Make Ford-Size Tires

Trump Bros. Rubber Co., of Akron, will soon begin the manufacture of small-size tires for Fords and other cars. At present the company produces 26,000 composition belts, and is also making material for radio panels. The factory has been in operation since December last.

500 Per Cent Stock Dividend

The Monatiquot Rubber Co., South Braintree, Mass., has declared a 500 per cent stock dividend on its common stock. The capital has been increased from $350,000 to $600,000. The 2,500 new shares of common stock, $100 par value, will be issued in the ratio of five to one to present common stock holders.

MARKETS

Cottons and Fabrics

NEW YORK, September 3, 1922

THE official report of the amount of carryover and the year's consumption brought cotton prices during the last week of August back to the 23 cent level from the low figure of 20 cents reached earlier in the month.

The consumption for the twelve months ending August 1 was estimated at 5,911,914 bales against 4,892,672 bales in 1921. The carryover of cotton in the United States was placed at 2,828,186 bales which is unusually small and compares with 6,534,360 bales for 1921 and 3,563,162 bales for 1920. The amount of cotton on hand in consuming establishments was 1,215,103 bales and considering the average consumption the past year this will meet the requirements of domestic mills for ten weeks.

Exports of domestic cotton in July amounted to 373,742 bales worth $42,560,000 compared with 598,962, worth $36,270,000 in July last year. During the seven months ending with July shipments abroad aggregated 3,254,261 bales worth $316,000,000 against 3,365,745 bales worth $248,000,000 during the corresponding months last year.

The figures on consumption show in bales: 9,301 Sea Island; 49,548 American Egyptian; 226,020 Egyptian and 70,381 other foreign; held in consuming establishments, July 31, 1922, 3,785 Sea Island, 19,861 American Egyptian, 63,179 Egyptian and 28,338 other foreign; held at compresses and in public storage, 3,305 Sea Island, 39,094, American Egyptian, 53,427 Egyptian and 21,065 other foreign. During the year there were imported: 233,729 bales Egyptian, 38,753 Peruvian, 15,563 Chinese, 53,636 Mexican and 21,784 other cotton.

Prices of spot cotton, for the week ending September 2, follow:

	Liverpool	New Orleans	New York
Aug. 28	13.48d	21.75c	22.55c
Aug. 29	13.60d	22.00c	22.85c
Aug. 30	13.68d	22.00c	22.80c
Aug. 31	13.66d	22.00c	22.70c
Sept. 1	13.70d	21.75c	22.25c
Sept. 2	Holiday		
Week's range—			
High	13.70d	22.00c	22.85c
Low	13.48d	21.75c	22.25c
Year to date—			
High	13.75d July 5	22.75 June 19	23.75 July 3
Low	9.16d Feb. 6	15.90 Jan. 30	16,45 Jan. 30

AMERICAN-EGYPTIAN COTTON

Sales of Pima cotton have been made on a basis of 35½ cents for Number Twos eastern delivery. A broader demand with somewhat better prices is expected after the new crop begins to move. As the greatest interest in long-staple cotton centers around the American-Egyptian cotton grown in the southwest the following statistics compiled by Frederick H. Andres, Inc., Boston, are timely:

Season	Area in Acres	Average Yield Lint Cotton per Acre in Pounds	Total Production in Bales	Prices per Pound
1912/13	400	300	240	20c Average
1913/14	4,000	275	2,200	20c "
1914/15	12,000	258	6,200	15c "
1915/16	3,500	170	1,150	22c "
1916/17	7,300	226	3,300	43c "
1917/18	33,000	230	15,200	75 to 42c "
1918/19	72,000	250	36,000	35 " 65c "
1919/20	87,000	250	43,500	65 " 125c "
1920/21	200,000	205	83,000	84 " 25c "
1921/22	75,000	210	30,000	25 " 40c "
1922/23	86,000	213	35,000–Estimate by Govt	

Prices are based on Number Two cotton.

EGYPTIAN COTTON

The most recent reports on the Egyptian cotton crop would indicate that the yield will approximate only 500,000,000 pounds or about 100,000,000 pounds less than usual. The acreage is much lower than the average; the figure being 1,340,969. The United States has fallen back as a buyer of Egyptian cotton and it is reported that the decrease in the sale of long staple cotton to the United States is due to the tariff on that article. At the present time the United States is importing only short-staple cotton.

EXTRA STAPLE COTTON

Prices on extra staple cotton, strict middling in grade and color, f.o.b., New Bedford are quoted as follows: 1⅛ inch, 30 to 32½ cents; 1 3/16 inch, 32½ to 34 cents; 1¼ inch, to 34½ to 37 cents; 1 5/16 inch, 37½ to 40 cents.

Egyptian uppers, medium, 28½ to 30 cents; Peruvian Mitafifi, 28½ to 30½ cents; Sea Island, extra choice, 43 to 45½ cents.

COTTON EXPORTS FROM ALEXANDRIA

Alexandria, August 3, 1922

	Receipts Alexandria Cantars	Exports in Bales to England	Continent	America	Total Exports Cantars	Stock Alexandria Cantars
This week	11,531	2,608	1,257	50	29,678	1,650,501
Same week 1921	45,713	3,516	3,157	1,000	58,712	1,978,955
" " 1920	3,879	4,996	283	699	45,481	559,740
Since 9/1/1921	5,316,574	333,622	227,377	162,414	5,501,673	——
Same time 1920	4,813,831	214,039	159,860	49,515	3,233,078	——
" " 1919	5,576,091	339,680	131,099	251,740	5,459,351	——

CORD FABRICS

Combed Sakellarides	.81	@	.85
Carded Sakellarides lb.	.75	@	.78
Combed Peeler lb.	.65½	@	.70
Carded Peeler lb.	.54	@	.59
Combed Egyptian uppers lb.	.67	@	.72
Carded Egyptian uppers lb.	.60	@	.64

SQUARE WOVEN

17¼-ounce Egyptian uppers, combed lb.	.62	@	.67
17¼-ounce Egyptian uppers, carded lb.	.55	@	.60
17¼-ounce Sakellarides, combed lb.	.78	@	.82
17¼-ounce Sakellarides, carded lb.	.70½	@	.73
17¼-ounce Peeler, combed lb.	.60½	@	.65
17¼-ounce Peeler, carded lb.	.50	@	.55

SHEETINGS—The demand broadened considerably during the last two weeks of August and the market for all items was stronger than it has been for some time when the Government cotton crop was issued. 40 inch, 285 yard, was in demand at 12 cents a yard and 40 inch, 3.60 yard, at 11½ cents. 40 inch, 4.25 was quoted at 9 cents a yard.

DUCKS—There was only a fair demand but prices continued strong. For single filling 18 to 19 cents was asked, price varying according to the grade; double filling brought 19¼ to 21 cents; card basis; enameling was offered at 40 to 42 cents a pound, depending on make and width.

BURLAPS—The burlap market continued fairly active with spot, afloat and future prices very strong. Latest reports from India confirm the preliminary report that the new crop of Jute will be the smallest on record as to acreage and as last year's yield was only 4,000,000 bales with a better acreage, even with the more favorable weather that prevailed during the summer it is hard to conceive of a yield greater than last year which was the lowest since 1895.

SHEETINGS

40-inch 2.50-yard yd.	.14½	@	.14½
40-inch 2.85-yard yd.	.12	@	.12¼
40-inch 3.15-yard yd.	**.14**	**@**	**—**
40-inch 3.60-yard yd.	.11½	@	—
40-inch 3.75-yard yd.	**.10**	**@**	**—**
40-inch 4.25-yard yd.	.09	@	—

DUCKS

Belting lb.	.36	@	.38
Hose lb.	.36	@	.38
Enameling lb.	.39	@	.42
Shoe Ducks lb.	.47	@	.49
Single Filling lb.	.18	@	.19
Double Filling lb.	.19¼	@	.21

BURLAPS (Carload Lots)

8 -ounce 40-inch ...100 yds.	5.85	@	5.95
7½-ounce 40-inch	5.75	@	5.85
10 -ounce 40-inch	8.75	@	8.85
10½-ounce 40-inch	8.90	@	9.00

DRILLS

37-inch 3.25-yard yd.	.11¾	@	—
37-inch 2.75-yard yd.	.13¼	@	.13½
37-inch 3.00-yard yd.	.12½	@	—
37-inch 3.50-yard yd.	.11¼	@	—
37-inch 3.95-yard yd.	**.10**	**@**	**—**

OSNABURGS

30-inch 7-ounce	.12¾	@	.13
40-inch 7-ounce	.13½	@	.14

Chemicals and Compounding Ingredients

THE INDUSTRIAL CHEMICAL MARKET—NEW YORK, Sept. 10, 1922—The last period was fairly satisfactory considering that production and distribution of many items was hampered by the coal and rail strikes. Prices held up well even if trading was not very brisk. There was the same tendency that has prevailed for some time past to buy chiefly for immediate use with little regard to anticipate the future. The National Exposition of Chemical Industries to be held the week of September 11 brings to mind that a year ago the chemical industry was in a state of great depression, demand had almost ceased and prices were at their lowest. Each month since has shown an improvement and the outlook is decidedly promising.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90 @	.95
Aniline oil, bulk basis,	lb.	.14 @	.16
Excellerex,	lb.	.35 @	.40
Formaldehyde-Aniline	lb.	.45 @	.50
Hexamethylene-tetramine	lb.	.70 @	.72
Paraphenylenediamine	lb.	1.55 @	1.57
Thiocarbanilide	lb.	.26 @	.35
Vulcocene	lb.	.35 @	—

Inorganic

Lead, dry red bbls.	lb.	.09 @	.09¼
Lead, white, basic carbonate	lb.	.07¼ @	.08
Litharge, domestic	lb.	.08½ @	.08¾
imported	lb.	.17 @	—
Lime, Superfine	lb.	.02 @	.02½
Magnesia, calcined,			
light,	lb.	.23 @	.24
extra light	lb.	.45 @	—
heavy	lb.	.05 @	.05½
Orange Mineral	lb.	.12 @	.14

COLORS

Blacks

Carbon Black	lb.	.16 @	.20
Micronex	lb.	.17 @	.24
Lamp Black	lb.	.12 @	.40
Bone "	lb.	.05½ @	.07½
Drop "	lb.	.07½ @	.16
Ivory "	lb.	.15 @	.45

Blues

Prussian	lb.	.50 @	.60
Ultramarine	lb.	.08 @	.35
Cobalt	lb.	.21 @	.26

Browns

Iron oxide	lb.	.04 @	.05
Sienna, Italian,	lb.	.05½ @	.14
Umber Turkey,	lb.	.04 @	—
Vandyke, domestic		.03½ @	.04½

Greens

Chrome, light, c. p.	lb.	.30 @	.32
medium	lb.	.35 @	.36
dark	lb.	.36 @	.45
commercial	lb.	.12 @	—
Rubber Makers Green	lb.	3.50 @	—

Reds

Antimony, crimson	lb.	.40 @	—
golden	lb.	.27 @	—
red sulphuret	lb.	.20 @	.22
Indian, English, pure	lb.	.12 @	.15
Para toner	cwt.	1.00 @	1.10
Rubber makers red	lb.	3.50 @	—
purple	lb.	2.50 @	—
Toluidine toner	lb.	2.10 @	—
Tuscan red		.17½ @	.35
Venetian red	lb.	.03½ @	.06
Vermillion, quicksilver,			
English	lb.	1.15 @	—
domestic	lb.	.25 @	.30

Whites

Albalith	lb.	.06 @	.06½
Aluminum bronze	lb.	.55 @	.60
Azolith	lb.	.06 @	.06½
Lithopone, domestic			
(factory)	lb.	.06 @	.06½
Zinc oxide,			
American Horse Head Special	lb.	.07½ @	.08
XX red	lb.	.07 @	.07½
American Azo:			
ZZZ (lead free)	lb.	.07 @	.07½
ZZ (under 5 per cent leaded)	lb.	.06¼ @	.06¾
Z (8-10 per cent leaded)		.06 @	.06¼
Zinc oxide, French process, White seal	lb.	.11 @	.11¼
Green seal	lb.	.09¾ @	.10¼
Red seal	lb.	.08¾ @	.09¼

Yellows

Chrome, light, c. p.	lb.	.16 @	.17
dark	lb.	.16 @	.17
medium	lb.	.16 @	.17
Ocher, French	lb.	.02½ @	.03½
domestic	lb.	.02 @	.03
Rubber Makers' Yellow,	lb.	3.50 @	—

COMPOUNDING INGREDIENTS

Aluminum flake	ton	25.00 @	30.00
hydrate	lb.	.17 @	.18
Ammonia carbonate,	lb.	.07 @	.08¾
Barium carbonate	ton	61.00 @	63.00
Barytes, southern off-color,	ton	.15 @	.17
Western, prime white,	ton	23.00 @	—
Basofor	lb.	.04¾ @	—
Blanc fixe, dry, f.o.b. works	lb.	.04¼ @	.04½
Carrara filler	ton	18.00 @	—
Chalk, precipitated,			
extra light	lb.	.03½ @	.04¼
heavy	lb.	.02½ @	.03¼
Clay, China, domestic,	ton	15.00 @	16.50
imported	ton	15.00 @	22.00
Dixie	ton	22.00 @	32.00
Blue Ridge	ton	22.00 @	32.00
Fossil flour	ton	60.00 @	—
Glues, extra white	lb.	.30 @	.40
medium white	lb.	.20 @	.26
cabinet	lb.	.18 @	.30
cabinet low grade	lb.	.15 @	.18
common bone	lb.	.08½ @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
amorphous	lb.	.05 @	—
Infusorial earth, powdered	ton	60.00 @	—
bolted	ton	65.00 @	—
Mica, powdered	lb.	.15 @	—
Rotton Stone (powdered)	lb.	.02½ @	.04½
Silica (gold bond)	ton	40.00 @	50.00
Soapstone, powdered	ton	15.00 @	20.00
Starch, powdered corn	cwt.	2.85 @	2.95
Talc, domestic	ton	15.00 @	18.00
French	ton	22.50 @	30.00
French, high grade	ton	40.00 @	45.00
Italian,	ton	44.00 @	55.00
Terra Alba	ton	23.00 @	—
Tripoli, white	ton	27.50 @	32.50
Whiting, commercial	cwt.	1.10 @	—
Quaker	ton	13.00 @	15.00
English cliffstone	cwt.	1.70 @	1.90
gilder's bolted	cwt.	1.15 @	1.25
Paris white American	cwt.	1.35 @	1.45
Wood pulp XXX	ton	27.50 @	—
" " X	ton	22.50 @	—
Zinc Oxide—			
5 per cent leaded		.06¼ @	.06¾
10 per cent lead sulphate	lb.	.06 @	.06½
20 per cent lead sulphate	lb.	.06 @	.06½
35 per cent lead sulphate	lb.	.06 @	.06½

(Also see whites)

MINERAL RUBBER

Gilsonite	ton	70.00 @	—
Genasco (factory)	ton	50.00 @	—
Hard hydrocarbon	ton	32.00 @	42.00
Soft hydrocarbon	ton	30.00 @	35.00
Pioneer M.R.	ton	42.00 @	44.00
320 M. P. hydrocarbon (c. l. factory)	ton	45.00 @	50.00
300/310 M. P. hydrocarbon (c. l. factory)	ton	40.00 @	43.00
Synpro, granulated, M.R. (factory)	ton	65.00 @	75.00

SOFTENERS

Acids

Acetic, 28 per cent	cwt.	2.67 @	2.92
Phenol	lb.	.18 @	.23
Cresylic, 97 p. c.	lb.	.56 @	.58
95 p. c.	lb.	.51 @	.53
Muriatic, 20 degrees	cwt.	1.10 @	1.25
Nitric, 36 degrees	cwt.	4.75 @	5.25
Sulphuric, 66 degrees	ton	14.00 @	16.00
60 degrees, bulk	ton	9.00 @	11.00
Tartaric, crystals	lb.	.30 @	—

Alkalies

Caustic soda, 76 p.c.	cwt.	3.70 @	3.75
Soda ash, 58 p.c.	cwt.	1.95 @	2.30

Oils

Castor, No. 3, bbls.	lb.	.12½ @	—
Corn, crude, bbls.	lb.	.09¾ @	—
refined	lb.	.11½ @	—
Chinawood, bbls.	lb.	.12 @	.12¼
Cottonseed,	lb.	.08½ @	.09
Glycerine, drums	lb.	.17 @	.17½
Linseed, domestic	gal.	.82 @	.83
imported	gal.	.84 @	.85
Palm, Niger		.06 @	.06¼
Lagos		.07 @	.07⅛
Peanut, domestic, crude	lb.	.11¾ @	.12
Petrolatum, amber	lb.	.04⅛ @	.04¼
dark amber	lb.	.03⅝ @	.03⅞
Pine, steam distilled	gal.	.90 @	—
Rapeseed, refined	gal.	.83 @	.84
blown	gal.	.95 @	1.00
Rosin, first rectified	gal.	.39 @	—
second rectified	gal.	.41 @	—
Tar, commercial	gal.	.31½ @	—
Soya Bean		.12 @	—
Petrolatum, standard	lb.	.05 @	.08

Resins and Pitches

Cumar resin, hard	lb.	.09 @	.14
soft	lb.	.09 @	.14
Tar Retort	bbl.	11.00 @	—
kiln burned	bbl.	10.00 @	—
Pitch, Burgundy	lb.	.05 @	.06
coal tar	ton	.01½ @	—
pine tar		.03 @	—
Rosin, grade K	bbl.	6.50 @	—
Strained	bbl.	6.00 @	—
Shellac, fine orange	lb.	.90 @	—

Solvents

Acetone, drums	lb.	.10½ @	.12
Alcohol, denatured,			
No. 1 bbls.	gal.	.32 @	.34
Benzol, 90 per cent	gal.	.27 @	.32
pure	gal.	.30 @	.35
Carbon bisulphide,	lb.	.06 @	.07
tetrachloride	lb.	.09½ @	.10⅛
Dimethylaniline	lb.	.35 @	—
Motor gasoline,			
steel bbls.	gal.	.25 @	—
Naptha, V. M. & P.	gal.	.24 @	—
Toluol, pure	gal.	.30 @	.35
Turpentine, spirits	gal.	1.23 @	—
wood	gal.	1.12 @	—
Paracymene	lb.	.15 @	—

Waxes

Beeswax	lb.	.38 @	.42
Caranuba, No. 1	lb.	.20 @	—
Ceresin, white	lb.	.09 @	.10
Bayberry	lb.	.20 @	.24
Montan, crude	lb.	.03¾ @	.04
Ozokerite, black,	lb.	.15 @	.17
green	lb.	.26 @	.27
Paraffine	lb.	.02¾ @	.03
Sweet wax	lb.	.12 @	—

SUBSTITUTES

Black	lb.	.08 @	.14
White	lb.	.09 @	.16
Brown	lb.	.10 @	.15
Brown factice	lb.	.08 @	.14
White factice	lb.	.09 @	.16

VULCANIZING INGREDIENTS

Lead, black hyposulphite (black hypo)	lb.	.25 @	.35
Sulphur chloride (jugs)	lb.	.13½ @	—
Sulphur flour pure	cwt.	2.00 @	2.40
Bergenport pure	cwt.	2.55 @	2.90
superfine, 100 p. c.	cwt.	2.60 @	3.15

Zinc Oxide—There has been improvement in the demand for leaded grades since the recent reduction in the prices of American process oxides. The demand from tire manufacturers continues to be good. Prices remained unchanged. American process, lead free, car lots, 7½ cents; 5 per cent leaded, car lots, 6½ cents; 10 to 35 per cent leaded, carlots, 6¼ cents.

Litharge—The market for domestic was somewhat better but there was little call for imported material. Quotations follow: Casks, 8½ to 8¾ cents; 100 pound kegs less than 500 pounds, 12½ cents; 500 to 2,000 pounds, 12¼ cents; 2,000 to 10,000 pounds, 10.8 cents; 10,000 to 30,000 pounds, 10.4 cents.

Lithapone—Consumption continues heavy and orders are being accepted up to the end of the year at the present prices. The price of domestic remains unchanged at 6 cents per pound in bags; 6¼ cents, in barrels, carlots, and 6½ cents in barrels less than carlots.

Orange Mineral—The demand for this material has not been very active. Domestic goods are in much better favor than the imported orange mineral. Domestic brought 12 to 14 cents per pound; German was quoted at 14 cents and French 15 cents.

Barytes—Producers report heavy withdrawals during the past two weeks on account of the railroad situation. There is no talk of any change in price at the present time. Quotations remained $23 per ton f.o.b. mines, for Prime Western.

Blanc Fixe—There was no advance in price notwithstanding the curtailment of output caused by the difficulty in obtaining raw material. Prices continue at 4¼ to 4½ cents per pound for dry and $40 to $50 per ton for pulp.

Whiting—There was a steady market with consumption along liberal lines. The proposed increased duty on whiting is expected to advance prices when the new tariff goes into effect. Quotations follow: Commercial, $1.10 per 100 pounds; American paris white, $1.35 to $1.45; English cliffstone, $1.70 to $1.90; gilders bolted, $1.15 to $1.25.

Talc—The demand for both domestic and imported has been good all season. Prices continue to be quoted at $15 to $18 per ton for domestic; French, $22.50 to $30; Italian, $44 to $55.

Caustic Soda—The call for this material has been away beyond the season's average. Standard brands on spot for domestic consumption are offered at $3.75 per 100 pounds in carlots. Basis 60 per cent was advanced to $2.70 per 100 pounds.

Soda Ash—Producers are sold well ahead and there is no sign of any slackening in the demand. There have been no changes in quotations made by leading producers and dealers quoted spot unchanged with barrels, $1.95 to $2.30 per 100 pounds, ex store.

Carbon Bisulphide—The demand has kept up and with supplies limited prices have held firm. Leading producers quote 6 to 7 cents per pound.

Carbon Tetrachloride—This material has been in limited demand and quotations were easy at 9½ to 10½ cents per pound.

Palm Oil—The market was quiet without any developments of consequence. Lagos was quoted at 7 cents per pound. Niger continued steady at the recent advance to 6 cents per pound.

Crude Rubber

NEW YORK Sept. 5, 1922

THE fact that last week the Dutch government definitely decided not to enter into restriction scheme for crude rubber production, either in cooperation with the British or alone, ended all prospects of an immediate advance in prices and, in fact, in the absence of any favorable news in the near future, seemed to point to even lower quotations. Without being unduly pessimistic, it is not too much to say that with imports of crude rubber still pouring into this country in volume and warehouse and manufacturers' stocks still at the peak a gradual shading off of prices may reasonably be anticipated. Added to these two factors is the approaching period of relaxation in the manufacture of tires and tubes, during which the large plants will be operating at only a fraction of their capacity, and this will furthur diminish the demand for raw rubber.

At present there is a so-called "squeeze" in the local market on First Latex Crepe, available supplies of this grade being closely held. While the spot market is nominally 13¾ to 13⅞ cents on this quality, some brokers have orders to buy at 14⅛ to 14¼ and cannot obtain the quantities they require. Stocks of First Latex Crepe seem to be in a few hands who are holding out for higher prices.

In general the market is extremely quiet, buyers being unwilling to go up in their offers and sellers equally unwilling to come down. There is an absence of information on which to base quotations, and, paradoxically, the only "safe bet" seems to be in futures with the "bears" having the better of the argument just now.

Quotations of this date are practically as follows:

Plantations			
Ribbed Smoked Sheets	.13⅜	@	.13⅞
First Latex, spot	.14	@	.14¼
October/December	.13¾	@	.14
January/March	.14¼	@	—
January/April, May, June.	.14⅝	@	.14¾
Amber Crepe No. 1	.13½	@	.13⅝
" " " 2	.13	@	—
" " " 3	.13	@	—
Light Clean Thin Brown Crepe	.13½	@	—
Commercially Clean Thin Brown Crepe	.13	@	—
Specky Brown Crepe	.12½	@	—
Roll Brown Crepe, spot	.11	@	.11⅛
Paras			
Maderia Fine	.22	@	—
Acre Fine	.19½	@	—
Up-river Fine	.18¾	@	—
Up-river Medium	.17½	@	—
Up-river Caucho Ball (shipment)	.13¼	@	—
Islands Fine	.17½	@	—
Islands Medium	.16	@	—
Islands Coarse	.08½	@	—
Cameta	.08½	@	.08¾
Xingu Ball	.10¾	@	—
Tapajos Fine	.17½	@	—
Pontanac			
Prime Pressed	.11¾	@	—
Plantation	.06	@	—
Bangermassin-Palembang	Nominal		
Siak Gutta Percha	.15	@	—
Prime Macassar	2.55	@	—
Balata			
Panama Block	.40¼	@	—
Surinam Sheets	.68	@	—
Columbia Block	.41½	@	—
Venezuela Block	.49	@	.51

Reclaimed Rubber

NEW YORK, Sept. 5, 1922

Prices on some grades of reclaimed rubber have shaded off slightly, although the market is virtually stagnant. The plants which are operating in this branch of the industry are running on a 35 to 40 per cent basis, with little indication of any change for the next few weeks at least. According to a well-informed reclaimed rubber operator, this commodity is being used because of peculiar characteristics of its own and not because it is cheaper than crude rubber which, in some instances, is actually lower- priced than the reclaimed article. For certain purposes, it appears, some grades of reclaimed rubber are better suited than the raw rubber despite the cheapness of the latter.

Quotations of this date are nominally as follows:

Standard Reclaims			
Floating	.12	@	$.13
Friction	.12	@	.13
Boots and Shoes	.09¾	@	.10½
Boots and Shoes (washed)	.12½	@	.13½
Mechanical	.08	@	.10
Hose	.10	@	.11
Tires, truck	.09	@	.10
Tires, auto	.09	@	.10
White	.12	@	.13

Scrap Rubber

NEW YORK, Sept. 5, 1922

The new reduced freight rate on scrap rubber in carload lots from New York to Akron, which went into effect Aug. 26, seems to have had no bearing on the market thus far. There is very little actual buying, the western factories being apparently well stocked up with scrap tires, tubes, hose, etc. The easing off of prices in the crude ruber market has now affected this market to some extent, for when new raw rubber is cheap there is not much incentive to invest in carload lots of scrap.

Quotations of this date (per pound in carload lots delivered, except Mixed Auto which is quoted per ton) are as follows:

Auto tire peelings	.00⅞	@	—
Standard White auto	.00⅞	@	—
Mixed auto ton	9.00	@	10.00
Bicycle tires	.00¼	@	.00⅜
Clean solid truck tires	.00⅝	@	.00¾
Boots and shoes	.02⅛	@	.02¼
Arctics, trimmed	.01½	@	.01⅝
Arctics, untrimmed	.01⅜	@	—
Inner tubes, No. 1	.02⅞	@	.03
Inner tubes, compounded	.01⅝	@	.01¾
Inner tubes, red	.02¼	@	.02⅜
Battery jars, clean hard rubber	.00⅞	@	.01
Heels and pads	Nominal		
Black mixed	.00¼	@	—
Garden Hose	.00⅜	@	—
Air brake hose	.00⅜	@	.00½
Red packing	.00⅝	@	.00⅞
White mixed rubber	.01⅜	@	.01½

American Rubber Patents

1,420,306 Frank A. Cigol and Ludwig Dalla Villa, Paterson, N. J. Method of Painting Rubber Balls and the Like.

1,420,287 Roy Sanderson, Kenmore, Ohio. Method of and Apparatus for Making Rubber Nipples.

1,420,376 Hans H. Hellesoe, Chicago, Ill. Rubber Type.

1,420,081 Vincent Dirienzo, Madison, Wis. Pneumatic Tire.

1,420,245 Edward D. Dougherty, Dallas, Tex. Pneumatic-Tire Valve.

1,420,499 Herman F. Richter, Los Angeles, Calif. Pneumatic-Tire Valve.

1,420,490 Walter F. Miller, Dayton, Ohio. Expansible Core for Curing Automobile Tires and the Like.

1,420,611 Frederick S. Dickinson, New York, N. Y. Method of Constructing Pneumatic Tires.

1,420,959 David R. Bowen and Carl F. Schnuck, Ansonia, Conn., assignor to Farrel Foundry & Machine Co., Ansonia, Conn. Machine for Treating Rubber or Other Plastic Material.

1,421,323 Matt A. Volf, Pickens, W. Va. Tire.

1,420,623 Francis B. Converse, Norwalk, Conn., assignor to The Norwalk Tire & Rubber Co., Norwalk, Conn. Method of Making Tire Casings.

1,421,115 Guy R. Williams, San Francisco, Calif. Tire Construction.

1,421,106 Charles Oliver Snedeker, Bloomington, Ill. Cushion Tire.

1,421,081 Frederick C. Hall, Pawtucket, R. I., assignor to Jenckes Spinning Co., Pawtucket, R. I. Loom for Weaving Cord-Tire Fabrics.

1,420,803 Adrian O. Abbott Jr., Detroit, Mich., assignor to Morgan and Wright, a corporation of Michigan. Mold for Heavy-Truck Tire Flaps.

1,420,930 A. Dewey Kilgore, Akron, Ohio. Tire-Ply Turn-Up and Prodder Device.

1,421,029 Alliott Verdon Roe, Bursledon, England. Resilient Tire.

1,420,674 Joseph Stokes Williams, Riverton, N. J. Resilient Tire.

Trade Marks Applied For

[The following are trade-mark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Marks Company, Barrister Building, Washington, D. C. or Bush Building, 130 West 42 Street, New York, trade-mark specialists. As an additional service feature to its readers this Journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.]

TOWNFIELD—No. 152,842. Finger Cahn Co., Inc., N. Y. C. For gloves made of leather and rubber.

WORTHLEY—No. 161,466. Worth, Inc., N. Y. City. For gloves of leather, fabric, and combination of leather and fabric, hose supporters.

BENCH & BAR—No. 160,769. J. Meyers Stationery & Printing Co. Inc., N. Y. C. For rubber or rubber-composition erasers.

TWO IN ONE, on picture of a glove and word "reversible" on thumb. No. 154,877. Improved Reversible Glove Co., Inc., N. Y. C. For gloves made of leather, made of fabric and made of rubber.

RACER—No. 153,599. I. Goldberg and Sons, Boston, Mass. For tennis shoes made of rubber, rubberized cloth, fabric, and combinations of the same.

TENTO—No. 159,053. George E. Pierce, doing business as Thomas F. Pierce & Son, Providence, R. I. For shoes which are made of leather, rubber, fabric and combinations of the same.

SPRI-FOOT—No.139,520. Fitz Chemical Company, Phillipsburg, N. J. For rubber heels.

MORESHU—in white letters across black diamond. No. 159,040. Walter H. More Co., Inc., N. Y. C. For shoes made of all leather or shoes having a leather upper and a rubber sole.

LADY JANE, below fanciful picture of a child. No. 158,318. F. Levy Shoe Co., St. Louis, Mo. For children's shoes made of leather, rubber, fabrics and combinations of materials.

THE MILEAGE ACE, in center of a picture of automobile tire. No. 133,061. The New Tread Tire Company, Columbiana, O. For automobile rubber tires.

BLECO—No. 161,524. Bleke Tire & Rubber Company, St. Paul, Minn. For automobile tires and tubes of rubber.

FLEXICORD—No. 161,437. The India Rubber, Gutta Percha & Telegraph Works Company Limited, London, England. For india-rubber tires.

DALCO—No. 158,384. Charles J. Dalton, doing business as C. J. Dalton Company, N. Y. C. For rubber tires.

New Incorporations

CALIFORNIA

California Tire & Rubber Co., to manufacture tires, etc. Capital stock. $500,000. Principal office, Long Beach, California.

Coast Tire Rubber Co. $1,000,000. Principal office San Francisco.

Giant Rubber Products Co., to deal in tires and rubber goods. $300,000. Incorporator: K. K. Parrott, 502 Exchange Building, Los Angeles, California.

CONNECTICUT

E. J. Todd, to manufacture rubber goods. $50,000. Incorporators: Alonzo P. Adams, Thomas C. Haddon and Robert H. Cameron. Principal office, New Haven, Connecticut.

DELAWARE

Times Square Auto Supply Co., to deal in tires, tubes, etc. $3,400,000. J. Froelich, president; L. Minzie, secretary and treasurer; Principal office, 1743 Broadway, New York City.

Antimony Products Corporation, to deal in antimony for the rubber trade. $6,000,000. Incorporators: R. K. Thistle, H. C. Hand, A. R. Myers, 65 Cedar Street, New York City. Delaware agent, United States Corporation Co., Dover, Delaware.

Boulevard Tire Sales Co., to manufacture and deal in tires. $5,000. Incorporators: S. H. Jones, A. S. Bishop, E. H. Feustel, Wilmington, Delaware.

Clinton Tire & Rubber Co., to deal in tires. $100,000. Incorporators: C. H. Jarvis, L. B. Phillips, M. F. Vance, Wilmington, Delaware. Delaware agent, United States Corporation Co., Dover, Delaware.

KANSAS

Consumers Rubber Co. 200 shares; no par value. Principal office, Topeka, Kansas

MAINE

Hamosax Manufacturing Co., to manufacture hard rubber substitute. $200,000. H. T. Hawthorne, president, Montclair, New Jersey; D. A. Hatch, treasurer, Bath, Maine. Principal Office, Bath, Maine.

NEW JERSEY

Roy Rubber Co. to deal in rubber goods. Incorporators: Minnie S. Royal, Morrisville, Pennsylvania; Herbert W. Backes and Edward L. Royal, Trenton, Ney Jersey.

Duratex Corporation, to manufacture leather rubber and textiles. $1,900,000, Incorporators: Arthur W. Britton, Samuel B. Howard and Robert K. Thistle, New York.

Burnet Rubber Co., to manufacture rubber goods. $50,000. J. H. Burnet, president; S. M. Stenart, treasurer and secretary; W. H. Burnet, vice president. Principal office, 525 Main Street, East Orange, New Jersey.

NEW YORK

Kasunda Supply Co., to deal in rubber belting. $10,000. Attorney, L. Howlet, Syracuse, New York. Principal office, Syracuse, New York.

Beyerle Manufacturing Co., to manufacture rubber specialties. $500,000. Incorporators: J. D. Farkas, E. Gross, A. Lefkowitz, 160 Fifth Avenue, New York City.

Genesee Service Corporation, to deal in tires. $10,000. Incorporators: C. and M. C. Schoeneck, W. A. Monks, Jr., Syracuse, New York.

Jacobi & Brown, Inc., to deal in tires and tubes. $5,000. Incorporators: W. Brown, 477 Eleventh street; L. E. Jacobi; A. E. Lawson, 619 East 31st Street, Brooklyn, N. Y. Principal office, 1335 Flatbush Avenue, Brooklyn, N. Y.

Michelson Bros. & Co., to manufacture tires etc. $15,000. Incorporators:Meyer Michaelson, Max Michelson, M. Schneider, The Bronx, New York, N. Y. Principal office, The Bronx, New York City.

Tex. Ricard Life Preserver Corporation, to manufacture life preservers. $1,000. Incorporators: G. L. Rickard, F. B. Flournoy, 26th Street and Madison Avenue, New York City; P. F. Shaughnessy, 416 Central Park West, New York City.

Smith Rubber Products Sales Corporation, to deal in tires. $25,000. Incorporators: N. Levy, 124 West 115th Street, New York City; H. Swiryn, 692 De Kalb Avenue, Brooklyn, N. Y.:M. Didshun, 356 Central Avenue, Brooklyn, N. Y.

OHIO

Oak Hill Rubber Co., to deal in rubber goods $175,000. Incorporators: R. E. Burkholder, G. W. Alden, J. F. Smith, O. M. Roderick and Beulah Hartman. Principal office, Oak Hill, Ohio.

Midwest Rubber Co. $25,000. Incorporators: G. . Field and L. V. Kimbel, W. C. Swancott, Olive Field and T. S. Stewart. Principal Office, Cleveland, Ohio.

States Rubber Holding Co. $100,000. Incorporators: F. H. Kelsey and Sam De Graw. Principal office, Cleveland, Ohio.

Personals

W. O. Rutherford, vice president, and L. D. Brown, treasurer, of the B. F. Goodrich Co., Akron, Ohio, are making a six weeks' tour of England, France and Germany studying trade conditions and the tire and rubber industry of those countries. Goodrich headquarters in London and Paris as well as the plant at Colomb, near Paris, will be visited.

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A. A. Wolff, superintendent of the Dunlop Rubber Co. of Melbourne, Australia, who has been on a tour of inspection of the largest rubber factories in the United States, spent two weeks in Akron, Ohio, visiting all the big plants in that vicinity. The various production superintendents acted as his hosts.

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G. D. Kratz has been promoted to be general sales manager of the Falls Rubber Co., Cuyahoga Falls, Ohio, and Fred Comey has taken his former position of general factory superintendent. Charles Wattleworth, former chief engineer, has been made general superintendent.

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J. M. Nichols is now sales manager of the Dunbar Tire & Rubber Co., Dunbar, W. Va.

• • •

President E. G. Wilmer of Goodyear recently spoke at the noon luncheon of the Rotary Club of Akron on "Business Conditions with Relation to the Rubber Industry."

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L. C. Rockhill, former newspaper man and now Goodyear sales manager, recently completed fifteen years of service with the company and was awarded the Wingfoot pin.

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Harold Lane, it has been announced at the Swinehart plant, is to become manager of its Boston office.

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F. F. Mann, Goodyear distributor in Australia, is on a visit to the export department in Akron. He will remain in the United States for several months.

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M. Salbin, of Paris, France, Goodyear distributor in that country, was a recent Akron visitor at the big local plant. He is making a tour of this country.

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C. A. Myers, superintendent of Firestone's engineering department, is on his way home to Akron after visiting England, France, Germany, Italy, Belgium, Norway and Sweden.

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C. E. Shumaker, for four years in Goodyear's efficiency department, has been promoted to head the personnel, efficiency and employment departments at the Canadian Goodyear plant.

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William J. Kelly, Goodyear research chemist, has been sent to Germany by the company to study chemical research developments in foreign rubber and allied industries.